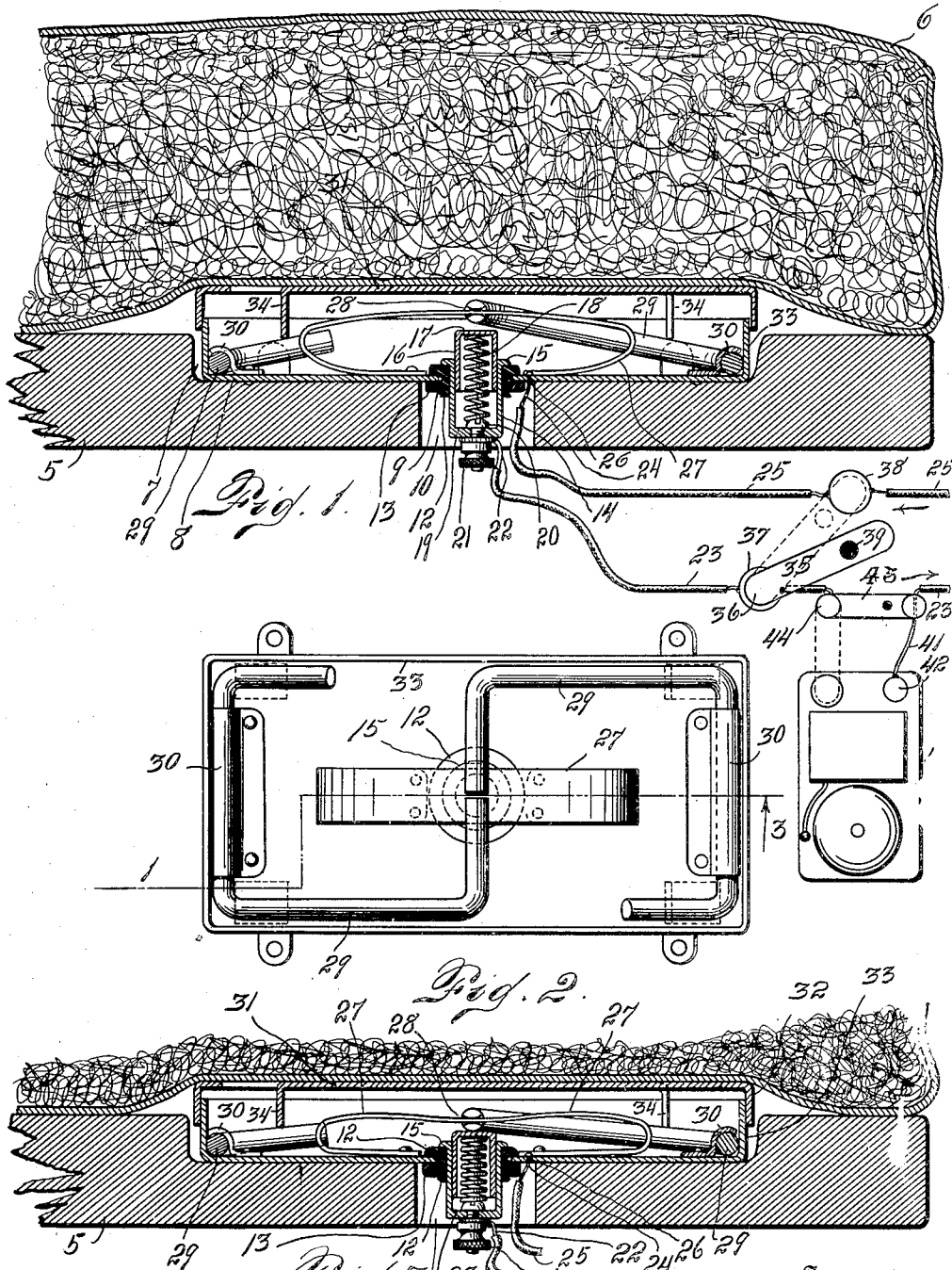


P. S. KEENAN.
 AUTOMATIC MAKE AND BREAK DEVICE.
 APPLICATION FILED MAR. 30, 1916.

1,229,473.

Patented June 12, 1917.



Witnesses
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AUTOMATIC MAKE-AND-BREAK DEVICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PATRICK S. KEENAN, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Automatic Make-and-Break Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for automatically making and breaking an electric circuit by downward pressure as by sitting upon a cushion or other seat in an automobile, the special use which I have in mind, being the closing of the electric light circuit with which the headlights or lamps of an automobile are connected, the arrangement being such that as the chauffeur takes his seat in the machine, the pressure upon the seat or cushion will act upon the make and break device to close the light circuit and, consequently, light the lamps in front, while, as the chauffeur stops the machine and leaves the seat, this circuit will be automatically broken, as it should be, since there is no occasion that the lamps in front should be lighted when the machine is standing still and not occupied. Provision is also made whereby a signal of any kind may be operated as the circuit is closed, so that in the event that an unauthorized person who wished to tamper with or steal the machine, should occupy the seat, the signal may be operated, thus notifying others in the vicinity that the person in charge has no authority. This signal may, of course, be of any desired character and may be cut out of the circuit by the owner of the machine or the one properly authorized to handle the same, before he takes his seat upon the cushion. This signal is auxiliary to the automatic control of the front lamps, and may be employed or not as desired or as circumstances may seem to dictate or require.

Having briefly outlined my improvement, as well as the function which it is intended to subserve, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illus-

trated an embodiment thereof. In this drawing,—

Figure 1 is a section taken through my improved construction shown in connection with a cushioned seat, a signal being also indicated and adapted to be arranged in the circuit. This view may be considered a section taken on the line 1—3, Fig. 2, so far as the operating parts of the make and break device are concerned.

Fig. 2 is a top plan view of the make and break device with the vertically movable cover for actuating the movable parts of the device, removed.

Fig. 3 is a section taken on the line 1—3, Fig. 2, but showing the complete construction, that is to say, with the top cover and the cushioned seat above in place.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a suitable stationary support as the part of an automobile below the cushion 6 of the seat. This support 5 is recessed or cut out as shown at 7 to form a depression of suitable depth and area, in which is located a casing 8 which is provided with a central opening 9 which communicates with an opening 10 through the part 5. Supported in the opening 9 by means of an insulating bushing 12 and a fastening nut 13 of the same material, is a cylindrical member 14 whose upper extremity is flanged as shown at 15 to overlap the bushing 12 and support the said member in place, the latter being open at the top to receive a hollow, inverted, cup-shaped, telescoping member 16 which coöperates with the member 14 and is closed at its upper extremity as shown at 17 where it is engaged by the upper extremity of a vertically disposed spiral spring 18 whose lower extremity engages the bottom 19 of the member 14, a binding screw 20 being passed through the bottom of the member 14, a nut 21 being applied to its lower protruding extremity for the purpose of securing a terminal 22 of an electric conductor 23 in place. A terminal 24 of another conductor 25, is secured to the bottom of the casing 8 as shown at 26. It will thus be noted that the two terminals are insulated from each other by the insulating bushing 12.

Centrally supported in the casing 8 and secured to the bottom thereof on opposite sides of the opening 9, are the extremities of

an oval shaped leaf spring 27 whose upper portion passes through slots 28 formed in the adjacent extremities of two twin members 29 which are hinged to the bottom of the casing at opposite ends as shown at 30, the slotted extremities of these two hinged members being normally supported above the telescoping member 17 except when there is sufficient pressure on the cushion 6 to bring the hinged members into engagement with the telescoping part 17, and the latter result is accomplished through the medium of a vertically movable cover 31 which is provided with a depending flange 32 which overlaps the upwardly extending flange or rim 33 of the casing 8 and is arranged in telescoping relation therewith. This cover is provided with two depending parts or lugs 34 which are suitably spaced, whereby they are arranged on opposite sides of the opening 9 in the bottom of the casing, being normally respectively in contact with the two members 29 of the make and break device. When these members 29 are in their normal position or when the circuit is open, the cover 31, while resting on the device 29, does not exert any downward pressure, or at least enough pressure to overcome the tension of the oval or bow-shaped spring 27. However, as soon as there is considerable pressure on the cushion 6 as is the case when a person is sitting thereon, the telescoping cover 31 will be forced downwardly upon the two members 29 with the result that the slotted extremities of the members 29, will be brought into engagement with the top of the telescoping member 17, which will yield sufficiently to maintain the contact within a considerable vertical range, thus providing for the vibration of the machine and the up and down movement of the person occupying the seat or cushion 6. As soon as the parts 29 are brought into engagement with the parts 17, the circuit will be closed as the two terminals 22 and 24 will thus be bridged since the members 29 are in engagement with the metallic casing 8, and the parts 14 and 17 together with the spring 19 are also of metal.

The two conductors 23 and 25 lead to the opposite poles of a suitable electrical source (not shown). If it is desired for any reason that the device should be inoperative the two conductors 23 and 25 may be short circuited between the make and break device and the source of current, by means of a manually operable switch arm 35 which is pivotally mounted as shown at 36 where it is in engagement with a contact 37 with which are connected two parts of the conductor 23. In other words, the contact 37 may be arranged in the conductor 23 by simply separating the latter and connecting its parts on opposite sides of the contact 37 with the latter. The switch arm 35 is

of sufficient length to reach a contact 38 located in or forming a part of the conductor 25. This switch arm is provided with an insulating hand piece 39 for convenience of manipulation. Normally, or when the make and break device is to be operative for making and breaking the circuit through the lights of the automobile or other translating device or devices, the switch arm 35 is in the full line position in Fig. 1.

If it is desired to locate a signal as an electric bell 40 in the circuit, this may be accomplished by opening one branch thereof as the conductor 23 (see Fig. 1) and connecting a part 41 of the conductor 23 with the bell as shown at 42, and employing a switch arm 43 which is pivotally connected as shown at 44 with a contact with which the conductor 23 is connected on the opposite side of the interruption from the part 41 of this conductor. When the signal 40 is cut out of the circuit, the switch arm 43 is in the full line position in Fig. 1, while, when the signal is in the circuit this switch arm is in the dotted line position in the same figure. It will be understood that the person in charge of the machine will not desire to operate this signal, and, consequently, before occupying the cushion 6, he will move the switch arm 43 from the dotted to the full line position, it being assumed that before leaving the machine he has shifted the switch arm 43 to the dotted line position so that in the event that an unauthorized person should attempt to move the machine, the signal will be operated.

Attention is called to the fact that the slots 28 which are formed in the adjacent extremities of the two members 29, are open for the insertion of the leaf spring 27, the said spring being put in place before the parts are arranged in operative position, as will be readily understood.

From the foregoing description the use and operation of my improved make and break device will, it is believed, be readily understood without further detailed explanation.

Having thus described my invention, what I claim is,—

1. A make and break device, comprising a support having a central opening, a vertical contact slidably mounted therein and located in one branch of an electrical circuit, a second contact arranged in the other branch of the circuit and composed of two hinged members normally spring supported intermediate their hinges out of engagement with the first named contact but movable downwardly into engagement therewith when subjected to pressure.

2. A make and break device, comprising a contact composed of spring spaced telescoping members mounted on the support and located in one branch of the electrical circuit.

cuit, a second contact arranged in the other branch of the circuit and composed of two hinged members normally spring supported intermediate their hinges above and out of engagement with the first named contact but vertically movable to engage the latter, substantially as described.

3. A make and break device composed of a casing having a central opening, a contact suspended in said opening, and located in one branch of the electrical circuit, a second contact in the other branch of the circuit composed of two hinged members which extend from their hinges toward each other, a spring connecting the contact portions of said members and normally supporting the same above the first named contact but movable downwardly under suitable pressure into engagement therewith, and means for normally insulating the two contacts from each other.

4. A make and break device, comprising a metallic casing having a central opening formed in its lower surface, a contact slidably mounted therein and insulated therefrom, the said contact and casing being respectively located in the two branches of an electrical circuit, a second contact composed of two members hingedly connected with the casing and extending toward each other, their adjacent extremities being normally spring supported above the first named contact but movable into engagement therewith under the influence of pressure in a downward direction.

5. In a device of the class described, the combination of a metallic casing, a contact centrally mounted in the casing and insulated therefrom, said contact and casing being respectively located in the two branches of an electrical circuit, a second contact composed of two members hingedly connected with the said casing and extending from their hinges toward each other, their adjacent extremities being normally spring supported above the first named contact, and a top casing member having depending parts engaging the said hinged members of the second contact and movable vertically for circuit closing purposes.

6. The combination of a metallic casing member having a central opening, a contact suspended in said opening but insulated from the casing, a second contact composed of two members hinged to the casing at its opposite extremities and extending normally

above the first named contact, and a leaf spring whose extremities are secured to the said casing on opposite sides of the opening therein and extending upwardly above said opening and forming a connection with and a support for the adjacent extremities of the hinged members of the second contact, whereby the said members are normally supported out of engagement with the first named contact.

7. A device of the class described, comprising a metallic casing member having a central opening, a contact suspended in said opening but insulated from the casing, a second contact composed of two members hinged to the casing at the opposite extremities of the latter and extending from their hinges toward each other and terminating above the first named contact, and a leaf spring whose extremities are secured to the said casing on opposite sides of the opening therein and extending upwardly above said opening, the adjacent extremities of the hinged contact members being slotted to receive the opposite edges of said spring, whereby the said contact members are normally supported above and out of engagement with the first named contact.

8. A make and break device, comprising a bottom metallic casing member having a central opening, a contact supported in said opening but insulated from the casing, a second contact composed of two members hinged to the casing at its opposite extremities and extending inwardly toward each other and terminating above the first named contact, a leaf spring whose extremities are secured to the said casing on opposite sides of the opening therein, and extending upwardly above said opening and forming a connection and support for the adjacent extremities of the hinged members of the second contact, and a top casing member arranged in telescopic relation with the said bottom member, and having depending parts which are adapted to engage the respective members of the second contact whereby as the top casing member is depressed the two contacts are brought into circuit closing relation.

In testimony whereof I affix my signature, in presence of two witnesses.

PATRICK S. KEENAN.

Witnesses:

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