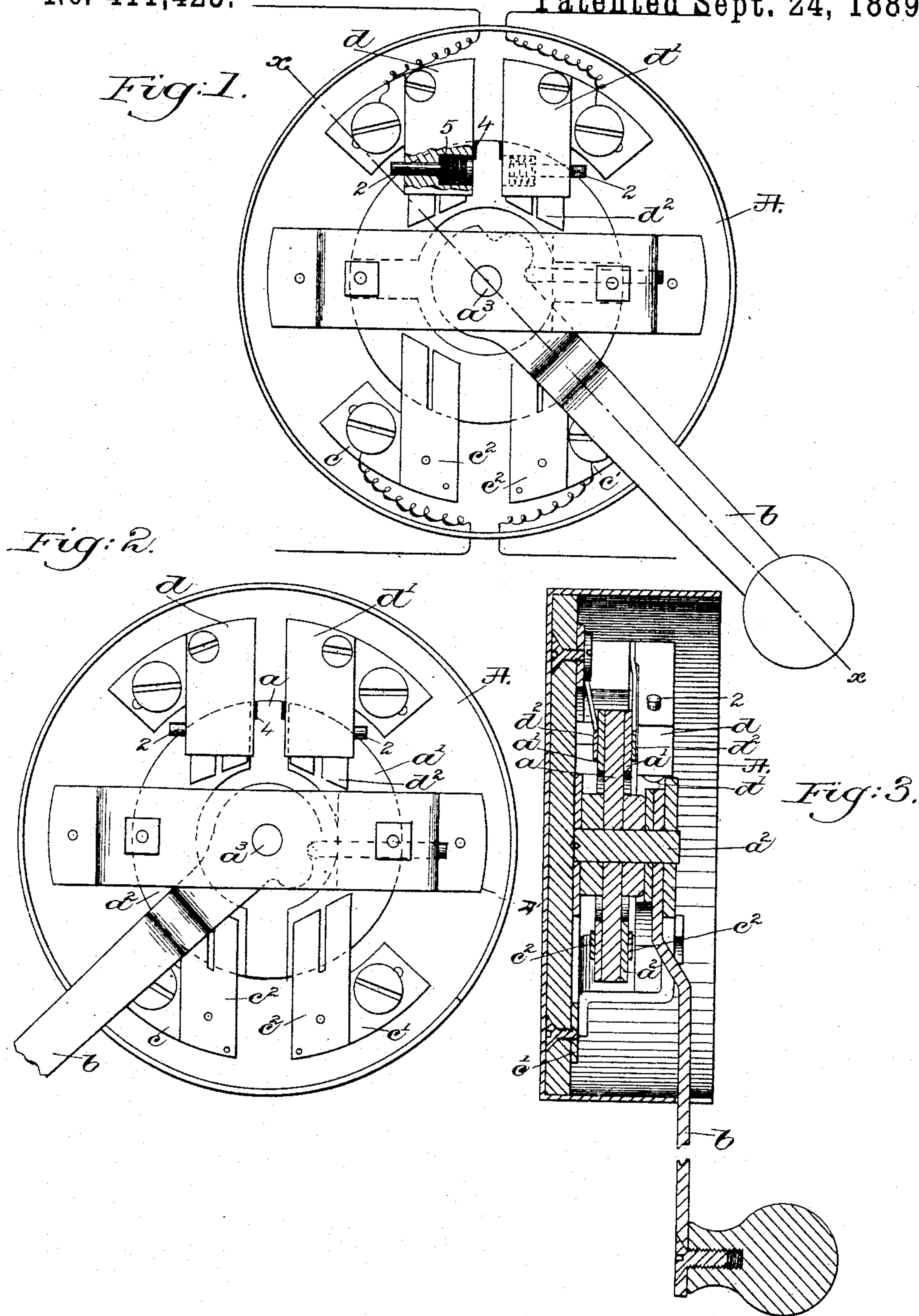


(No Model.)

O. S. BUSSMANN.  
SAFETY SWITCH FOR INCANDESCENT LIGHTS OR OTHER ELECTRICALLY  
CONTROLLED DEVICES.

No. 411,423.

Patented Sept. 24, 1889.



Witnesses.

Howard F. Eaton.

Fred L. Emery

Inventor.

Oscar S. Bussmann

by Lemby & Gregory  
Attys.



# UNITED STATES PATENT OFFICE.

OSCAR S. BUSSMANN, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO THE  
BERNSTEIN ELECTRIC LIGHT MANUFACTURING COMPANY, OF PORT-  
LAND, MAINE.

SAFETY-SWITCH FOR INCANDESCENT LIGHTS AND OTHER ELECTRICALLY-CONTROLLED DEVICES.

SPECIFICATION forming part of Letters Patent No. 411,423, dated September 24, 1889.

Application filed October 12, 1887. Serial No. 252,121. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR S. BUSSMANN, of  
Hamburg, Germany, but temporarily residing  
at Somerville, Massachusetts, have invented  
5 an Improvement in Safety-Switches for Incan-  
descent Lights and other Electrically-Con-  
trolled Devices, of which the following de-  
scription, in connection with the accompany-  
ing drawings, is a specification, like letters on  
10 the drawings representing like parts:

This invention has for its object to provide  
an electric switch of the class employed in an  
electric circuit to cut into and out of circuit  
one or several electrically-controlled devices  
15 to preserve the continuity of the main circuit  
or the continuity of both the main circuit  
and the auxiliary or secondary circuit con-  
taining the electrically-controlled devices,  
with an automatic circuit-changing device or  
20 contact-maker normally held disengaged, but  
when released is adapted to preserve the con-  
tinuity of the circuit, the switch at such time  
being open.

The invention consists in the combination,  
25 with an electric switch adapted to be man-  
ually or otherwise operated to cut into or out  
of circuit one or several electrically-operated  
devices, of an automatic circuit-changing de-  
vice or contact-maker normally held inoper-  
30 ative by fusible material and adapted to op-  
erate and change the condition of the cir-  
cuit—as, for instance, to preserve the con-  
tinuity of the circuit when the fusible hold-  
ing or retaining device or material is fused or  
35 otherwise removed.

This invention also consists in details of  
construction, to be hereinafter more fully  
pointed out.

Figure 1 shows in front elevation an elec-  
40 tric switch embodying this invention, the po-  
sition of parts being such as to preserve the  
continuity of the main line and cut out one  
or several electrically operated or controlled  
devices, the circuit containing the said de-  
45 vices being closed; Fig. 2, a similar view of  
the switch, the parts being in the position to  
open the main line and to cut out the electric-  
ally-controlled devices; and Fig. 3, a trans-  
verse section of the switch taken on the dotted  
50 line *x x*, Fig. 1.

The switch is herein shown as circular, and  
comprises the insulated disk *a*, having upon  
each side two contact-plates *a' a²*. The said  
disk is secured to a shaft *a³* having its bearings  
in the case A and in a bracket or frame A'. 55  
A hand-crank *b* is fixed to said shaft *a³*, by  
which the disk is moved on its axis.

Two conducting-blocks *c c'* are secured to  
the case A adjacent to each other, each of  
said blocks having two contact-pens *c²*, adapted 60  
to rest upon the companion contact-plates at  
each side of the disk. These conducting-  
blocks *c c'* are herein adapted to be connected  
with an auxiliary secondary branch loop or  
shunt-circuit containing one or several elec- 65  
trically-operated devices—such, for instance,  
as incandescent lamps. Two other conduct-  
ing-blocks *d d'* are secured to the case A ad-  
jacent to each other opposite the blocks *c c'*,  
said blocks *d d'* having each two pens *d²*, 70  
adapted to bear against companion contact-  
plates *a'* at each side as the top and bottom  
side of the disk *a*. These blocks *d d'* are de-  
signed to be connected with the main circuit.

The operation of the switch so far described 75  
is as usual—viz., with the contact-pens *d²*  
bearing upon the contact-plates *a'* and the  
contact-pens *c²* bearing upon the contact-  
plates *a²*, as shown in Fig. 2, the contin-  
uity of the main circuit is preserved and a 80  
circuit containing the electrically-controlled  
device or devices also closed; but, by simply  
turning the hand-crank *b* into the position  
shown in Fig. 2, the contact-pens *d²*, bearing  
one upon each contact-plate *a' a²*, and also 85  
the contact-pens *c*, bearing upon each contact-  
plate *a' a²*, thereby opening the main circuit  
and cutting in the circuit containing the elec-  
trically-controlled devices.

The switch when employed for incandescent 90  
lamps may be located to control the entire  
series of lamps contained in a single room, for  
instance.

It sometimes happens that the switch is op-  
erated to cut in the lamps or electrically-con- 95  
trolled devices—when, for instance, by acci-  
dent or inadvertence the circuit containing  
them is broken, as by a broken filament—in  
which instance the main line would be broken;  
and, under such circumstances, to preserve the 100



continuity of the main line one, or it may be two, automatic contact-makers are provided in connection with the blocks  $d d'$ . Each contact-maker consists of a block or spindle having an enlarged head 3 and held in sockets in the blocks  $d d'$  by a fusible retaining device 4. The retaining device 4 consists of material which fuses at a low temperature, and may either partially or wholly cover the end of the block. A spiral spring 5 surrounds the spindle or shank of the block and tends to force the same outward when released.

When the switch is operated to cut in the blocks  $c c'$  and the electrically-controlled devices connected therewith, should the line-wire connected with said blocks be broken, or should such wire be broken at any time after the switch has been operated, and while in the position shown in Fig. 1, the current upon the main line would form an arc between the blocks  $d d'$ , or it may be between the spring-controlled blocks, if they should be nearest each other, and the material 4 is immediately fused, thereby releasing one or both blocks, which by the spring or springs make contact with one another.

I claim—

1. A safety-switch comprising the following instrumentalities in combination: a disk having thereon two contact plates or surfaces constituting the movable member, contact-pens  $d^2 c^2$ , constituting the stationary members, and blocks to which they are attached, a hand-lever for moving the movable member of the switch, and one or more spring-controlled plugs in electrical connection with one or more blocks, and the fusible retaining device for the plugs, substantially as described.

2. The combination, with an electric switch comprising as a co-operative part of it two blocks  $d d'$ , of one or more spring-controlled plugs in electrical connection with one or both blocks, and a fusible retaining device for the plugs, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR S. BUSSMANN.

Witnesses:

BERNICE J. NOYES,  
B. DEWAR.