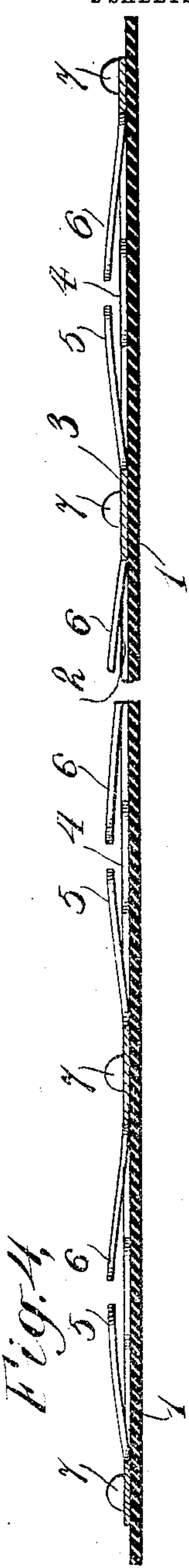
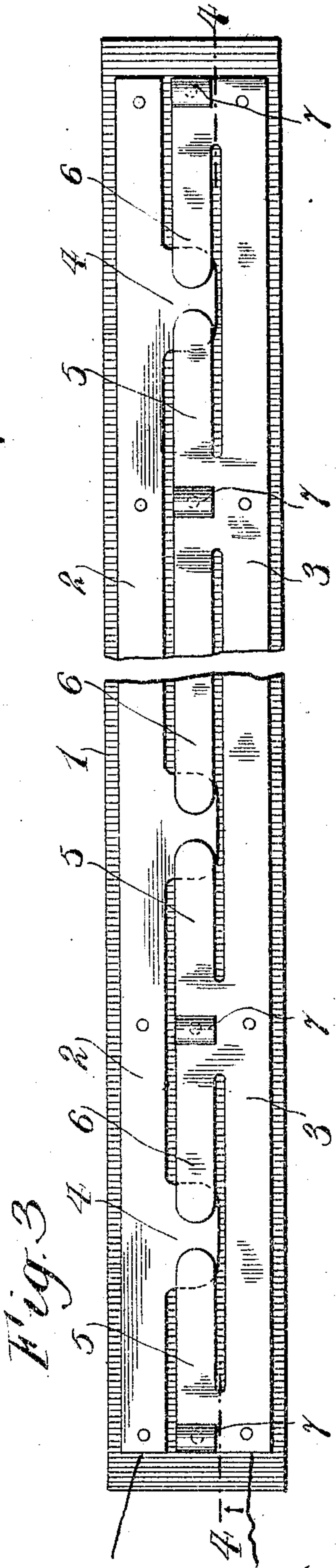
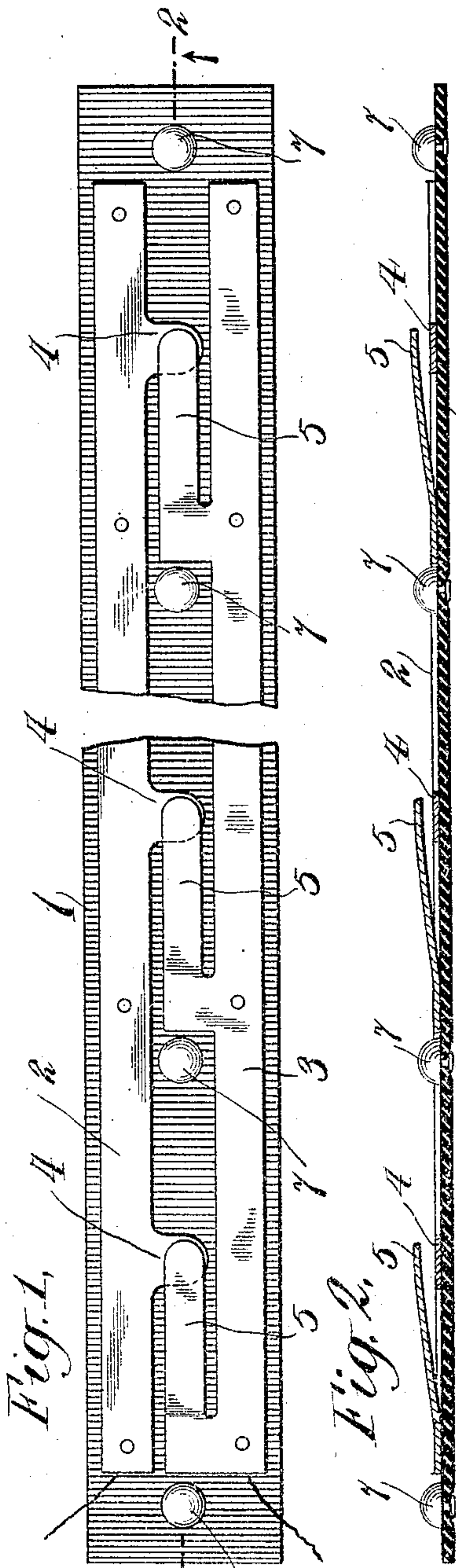


H. T. JOHNSON.
CIRCUIT CLOSING DEVICE.
APPLICATION FILED APR. 2, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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No. 774,436.

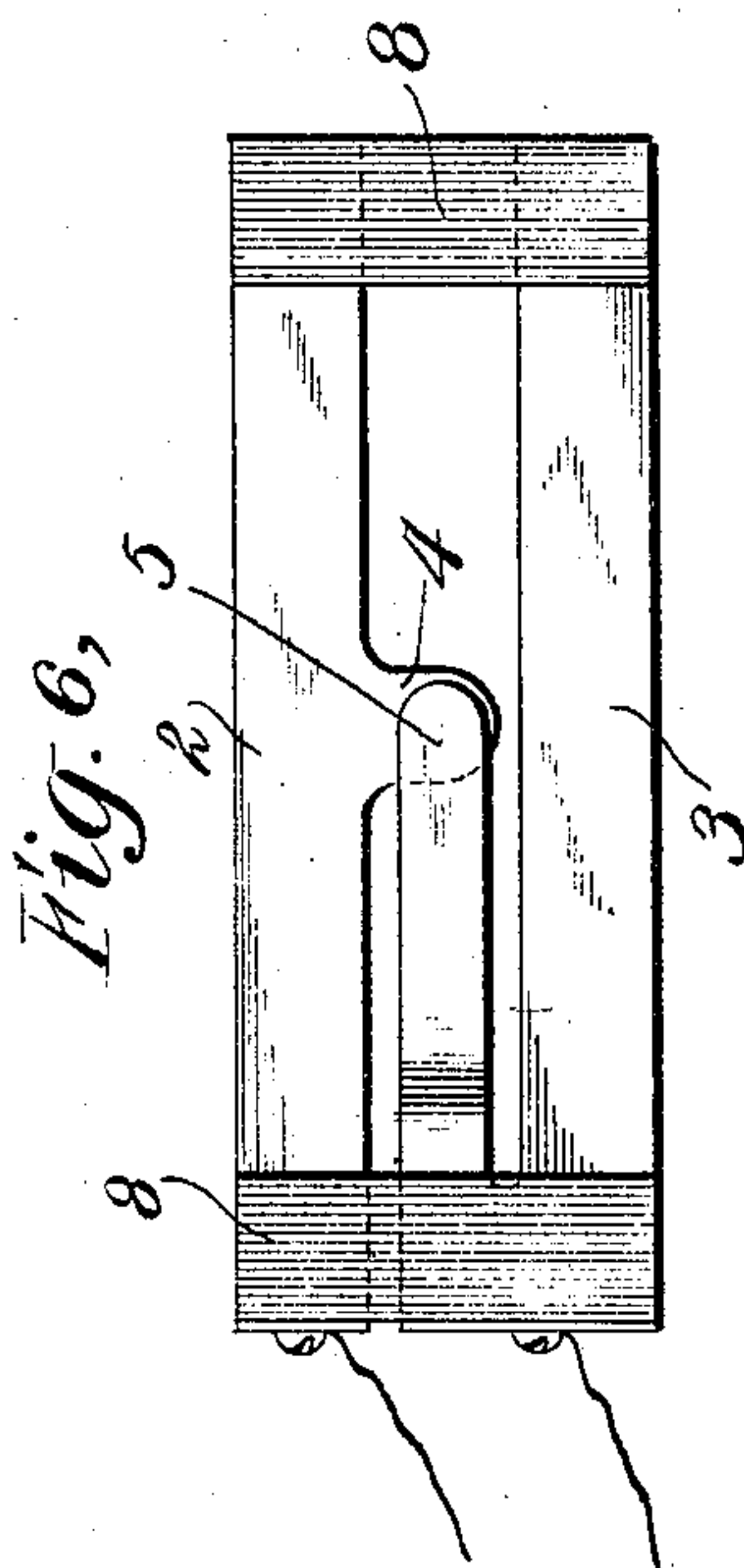
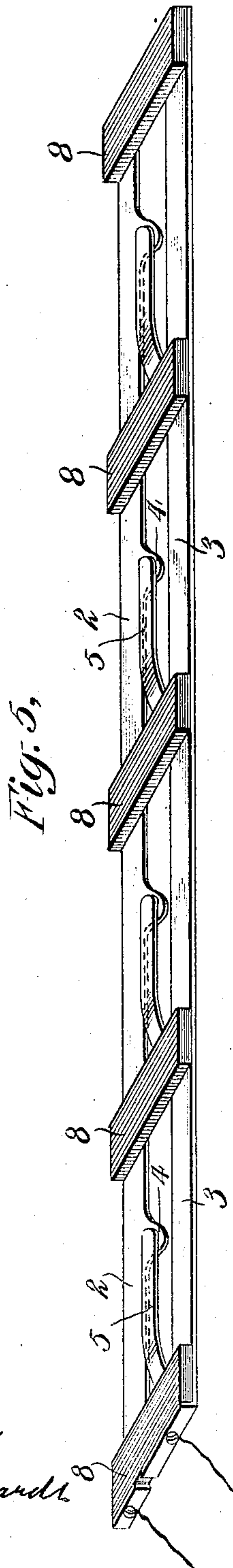
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HARRY T. JOHNSON, OF JERSEY CITY, NEW JERSEY.

CIRCUIT-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 774,436, dated November 8, 1904.

Application filed April 2, 1904. Serial No. 201,303. (No model.)

To all whom it may concern:

Be it known that I, HARRY T. JOHNSON, a citizen of the United States, and a resident of Jersey City, Hudson county, New Jersey, have invented certain new and useful Improvements in Circuit-Closing Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to provide a circuit-closing device which may be employed as an element in a burglar-alarm system and which is adapted to be concealed under a carpet, rug, or similar floor-covering to guard an entrance to a building or room or to protect a stairway or passage.

My invention is also adapted for use on an ordinary call-bell circuit, in which case it may be likewise placed under the floor-covering and operated to close the circuit by a slight pressure of the foot, thus fitting it for use in place of the ordinary push-button, which when used in such a situation causes an unsightly and inconvenient protuberance and rapid wear upon the floor-covering.

In the accompanying drawings, Figure 1 is a plan view of a device embodying my invention. Fig. 2 is a sectional elevation on the line 2 2, Fig. 1. Fig. 3 is a plan view showing a modification. Fig. 4 is a sectional elevation thereof on the line 4 4, Fig. 3. Fig. 5 is a perspective view showing another modification; and Fig. 6 is a plan view of a device embodying the invention, provided with only one set of contacts.

Similar reference characters are employed to designate like parts in all the views.

I have illustrated and will for the sake of clearness hereinafter specifically describe several practical embodiments of my invention, differing somewhat in some of their details, and it will be understood that other modifications therein may be made without departing from the spirit of my invention and having in a greater or less degree the advantages characteristic of the particular constructions shown. It is therefore not my intention in specifically describing the features illustrated

to restrict the scope of my invention to the specific details of construction further than as the phraseology of the claims may expressly call for such restriction.

Referring to the particular embodiment of my invention illustrated in Figs. 1 and 2, a backing or support 1 is formed of any suitable non-conducting substance—such, for instance, as vulcanized rubber or woven fabric. To the support 1 are secured, by rivets or other suitable fastenings, conducting-strips 2 and 3, both formed, preferably, of spring conducting metal, although the strip 3 may be made of soft metal, if desired. The strip 2 is provided with suitable contact-surfaces 4, which are usually formed as integral projections from the strip 2. The strip 3 is provided with the spring contact-tongues 5, the ends of which project over the contact-surfaces 4 and which by the resiliency of the tongues are held normally separated from the contact-surfaces. Preferably these tongues 5 are formed integrally with the strip 3. A series of guards 7 is provided for the purpose of relieving the spring contact-tongues 5 from the weight of the floor-covering to prevent the latter from accidentally closing the circuit thereby and to permit the tongues to return to their normal or open position when the operating pressure is relieved. As shown in Figs. 1 and 2, these guards are in the form of buttons secured to the support 1, and I prefer to make them of vulcanized rubber; but any suitable material may be employed. They are arranged in line with the tongues 5, and it is desirable to so space them that the point of contact between each of the tongues 5 and its contact-surface 4 will lie about midway between two adjacent guards, the distance between the guards being usually four to four and one-half inches, although it will be understood that this distance may be varied within practical limits to suit varying requirements. The strip 2 is connected with one wire of the circuit, and the strip 3 with the opposite wire.

It will be understood that in applying my invention to practical use as many sets of the strips and contacts may be employed as are

necessary to secure the requisite protection. For example, in protecting a stairway two sets of strips placed upon one of the treads will usually be sufficient, and with that arrangement, as will be apparent, it would be practically impossible to step on this tread of the stairs without closing the circuit and operating the alarm. In protecting a doorway a greater number of the strips may be employed, extending a sufficient distance from the door to prevent overstepping the contacts. Where a plurality of strips are employed, they may be secured to a single backing or support, or the supports may be independent, as desired, and the strips are so arranged that the contacts of one set will be opposite the guards of the next adjacent set. In certain situations it will also be possible to dispense entirely with the backing 1 and secure the strips and guards directly to a floor or other supporting-surface; but for obvious reasons I prefer to employ the backing.

In the modification illustrated in Fig. 3 I employ an additional contact-tongue 6 for each contact-surface, and the guards 7, which are of semicylindrical form, instead of being secured to the backing 1 are carried by the strip 3.

In the modification shown in Fig. 4 I dispense entirely with the backing 1, and the guards 8 are formed by some suitable insulating material—such as vulcanite, fiber, or hard rubber. They are of sufficient thickness to relieve the contact-tongues from the weight of the floor-covering, and the guards being secured to both strips insulate them from each other and maintain them in their proper position.

In Fig. 6 I have illustrated my invention in a form adapted for use on a call-bell or similar circuit in place of the ordinary push-button. The construction is the same as that shown in Fig. 5, except that it embodies only one set of contacts.

My improved circuit-closing device may be constructed at comparatively small cost, since the metallic parts can be cheaply formed by simple stamping operations, and the whole can be expeditiously assembled by unskilled labor. As so constructed and arranged the device will lie flat under a rug or carpet and will present a relatively large operative surface, so that a slight pressure of the foot at almost any point between the guards will close the circuit, the guards furnishing a sufficient support for the overlying floor-covering not only to prevent its weight from accidentally closing the circuit, but also to prevent the contacts from remaining closed when the operating-pressure is released.

Having thus shown and described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a circuit-closing device the combina-

tion of two conducting-strips normally out of contact, a spring contact-tongue connected with one of said strips, a contact-surface on the other strip, and guards arranged to project above said strips, substantially as set forth.

2. In a circuit-closing device adapted to be placed under a floor-covering, the combination of two conducting-strips normally out of contact, a contact-surface on one strip, guards, and a cooperating spring contact-tongue arranged between the guards and connected with the other strip, substantially as set forth.

3. In a concealable circuit-closing device, the combination of two conducting-strips, means for holding said strips apart in parallel and insulated relation to each other, a contact-surface on one of said strips, a spring contact-tongue projecting into the space between said strips and connected with the other strip and projecting guards for said tongue.

4. In a circuit-closing device the combination of two conducting-strips normally out of contact, a contact-surface on one of said strips, a spring contact-tongue formed integrally with the other strip and projecting over said contact-surface and projecting guards arranged on opposite sides of the contact-point, substantially as set forth.

5. In a circuit-closing device the combination of two conducting-strips each adapted to form one terminal of a circuit, and to be held out of contact in parallel relation to each other, a contact-surface on one strip, a spring contact-tongue formed on the other strip and extending in line therewith into the space between the strips, and guards for said contact-tongue.

6. In a circuit-closing device the combination of two conducting-strips each adapted to form the terminal of a circuit, means for holding said strips in insulated and parallel relation to each other, a contact formed on one strip and projecting toward the other strip, a spring contact-tongue formed on the other strip and projecting over the contact and projecting guards arranged substantially in line with said contact.

7. In a circuit-closing device the combination of two insulating-guards, a conducting-strip secured at each end to the under side of said guards, means for connecting said strip to one wire of the circuit, a spring conducting-tongue projecting from one of said guards over and normally out of contact with that portion of said conducting-strip which forms the contact for the tongue, and means for connecting said tongue with the opposite wire of the circuit.

8. In a circuit-closing device, the combination of two insulating-guards, a conducting-strip secured at each end to the under side of said guards, a second conducting-strip secured at each end to said guards, a resilient contact

connected with said last-mentioned strip and projecting over, but normally separated from the contact-point on the said first-mentioned strip, and means for separately connecting 5 said strips with the circuit-wires.

9. In a circuit-closing device the combination of two insulating-guards and two flat conducting-strips secured to the under side of said guards, a spring contact-tongue formed 10 integrally with one of said strips and projecting over a cooperating contact-surface of the other strip and means for separately connecting said strips to the circuit-wires.

10. In a circuit-closing device the combina-

tion of two insulating-guards and two conducting-strips connected to said guards to 15 form a flat frame-like device, a contact-surface carried by one of said strips, a spring contact-arm connected with the other strip and projecting over said contact-surface but 20 normally separated therefrom, and means for connecting said strips separately to the circuit-wires.

HARRY T. JOHNSON.

Witnesses:

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