

No. 776,998.

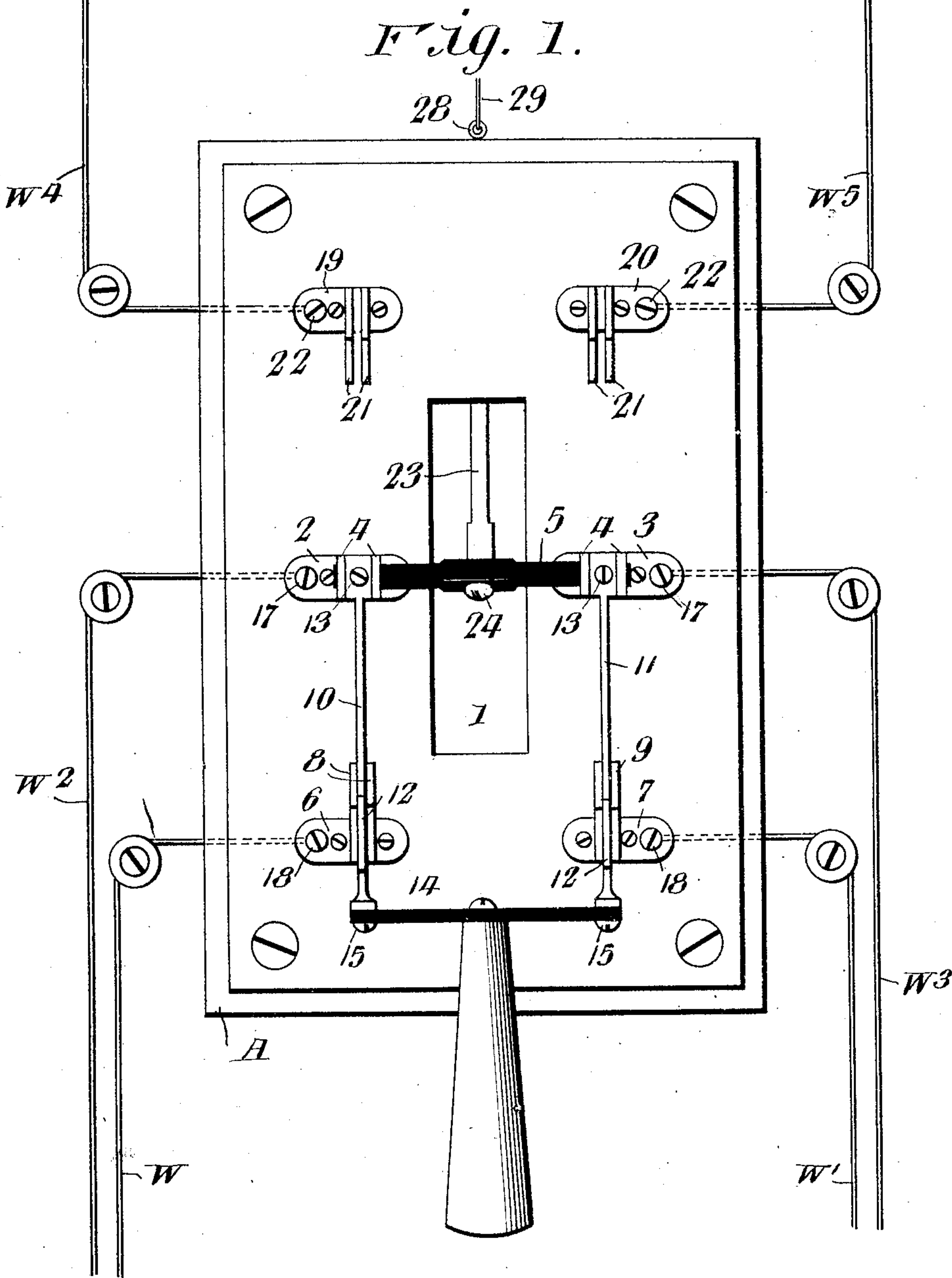
PATENTED DEC. 6, 1904.

T. A. CAMERON.
ELECTRIC SWITCH.

APPLICATION FILED JUNE 14, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



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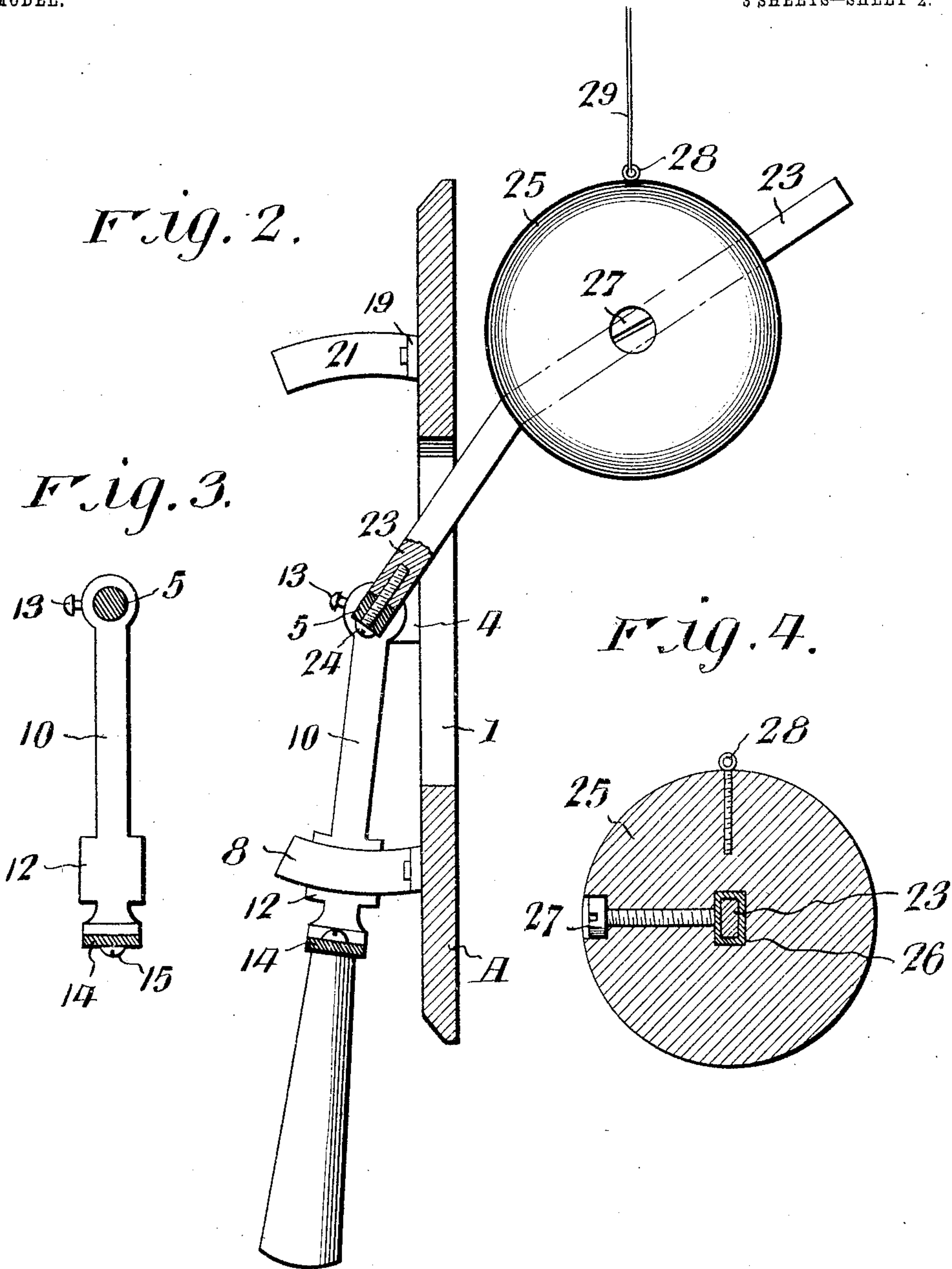
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3 SHEETS—SHEET 2.

Fig. 2.

Fig. 3.

Fig. 4.



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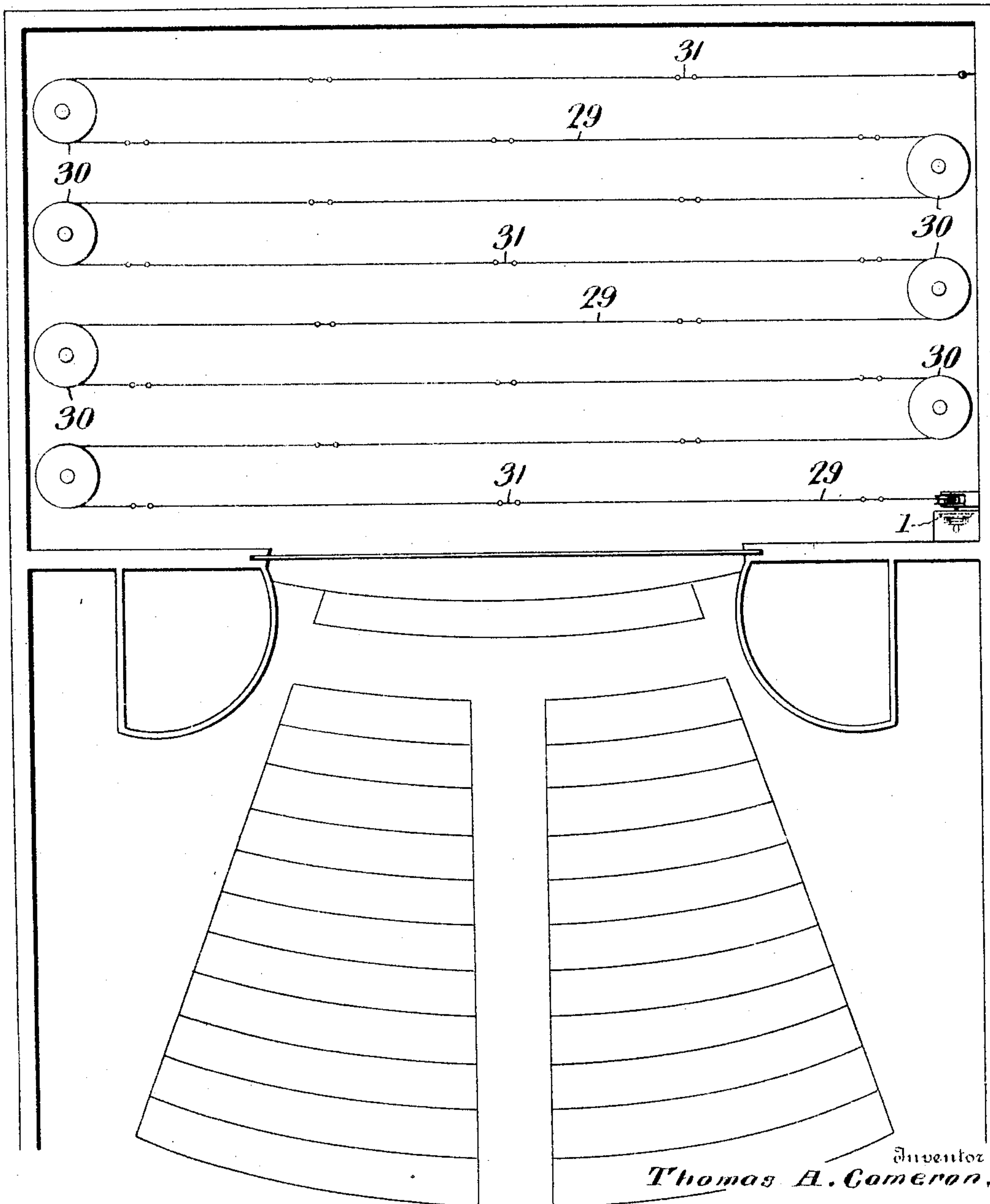
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3 SHEETS—SHEET 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS A. CAMERON, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 776,998, dated December 6, 1904.

Application filed June 14, 1904. Serial No. 212,522. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. CAMERON, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

My present invention relates to improvements in electrical switches; and the object is to provide an automatic switch which is adapted to the dual use of transferring connection from a system of lines to another automatically.

The invention is particularly adapted for use in instances where a private plant is provided, and an automatic connection may be made to a public system when an exigency occurs, as hereinafter stated.

The invention is well adapted to give announcement of some accident having happened to the private line or system and it becomes essential to give announcement through the public connections that an accident has occurred. I accomplish this desideratum automatically, as will be hereinafter fully disclosed.

The invention consists in the novel construction and arrangement of parts and their aggroupment in operative combinations, as will be hereinafter fully disclosed, and the novelty asserted distinctly pointed out and claimed.

The invention embodies a switch adapted to close the private circuit, and in case of the private lines being broken the switch will automatically drop from its connection therewith and close the public circuits.

The invention is particularly adapted for use in places where people congregate—such as public halls, theaters, and like places of public amusement and assemblage—so that should fire break out in any part of the building notice will be advertised to the point of notification.

I have fully and clearly illustrated the improvements in the annexed drawings, to be taken as a part of this specification.

Reference being had to the drawings, Figure 1 is a front view in elevation of my improved switch, showing the circuits controlled by the switch—that is, the circuit involved in

the private plant and the public connections. Fig. 2 is a vertical section through the supporting-plate of the device and side elevation of the switch handle and bar, the contacts, and the switch-actuating weight mounted on its lever-bar. Fig. 3 is a detail view of one of the arms of the switch-frame. Fig. 4 is a central sectional view through the actuating-weight, showing the means for mounting and securing the weight on its lever-bar. Fig. 5 is a diagrammatic plan view, conventional, of the stage and ground floor of a public hall or theater, showing the arrangement of the lines in the stage and connection to the switch.

In the drawings the several parts appearing in different figures are designated by the same reference notations, and reference being had to the drawings, A designates the base-plate, made of any suitable non-conducting material and of such area as may fit for the purposes of operatively sustaining the various elements to be carried by it and is sustained in position by bolts or screws projected through it, as indicated at 1 in Fig. 1 of the drawings. The base-plate is formed with an opening centrally disposed, the opening being intended to provide ample room for the action of the weight-arm hereinafter described.

2 3 designate oppositely-arranged plates of suitable conducting material formed with bearing ears or studs 4, wherein is journaled an arbor or shaft 5, made of a non-conducting material, such as hard fiber, and between the bearing-studs on the arbor are fixedly mounted the ends of the arms of the switch-lever. To the face of the base A are secured oppositely-arranged contact-plates 6 7, formed with contact-pieces 8 9, disposed in pairs, as indicated, and between which the arms of the switch-lever engage to complete the house or local circuit. The switch-lever consists of parallel duplicate arms or levers 10 11, preferably made with widened portions 12 at the points of intersection with the contact-pieces, the arms having their upper ends mounted on the arbor 5 and fixed thereto by set-screws 13. At the lower ends the lever-arms are connected by a non-conducting plate or bar 14, secured in position by fastening-screws 15. In the middle of the bar 14 is secured the switch-

handle 16, which may be of any proper material.

The house-circuit is made up of wires $w w'$ emanating from any suitable electrical source and having their terminal connected to binding-posts 18, thence to the plates 6 7 and contacts 8 9, thence through the lever-arms to plates 2 3 to binding-posts 17, and thence by wires w^2 and w^3 to the lights.

At the upper end portion of the base A are mounted oppositely-positioned conducting-plates 19 20, formed or provided with contact-pieces 21, spaced apart with the space in direct alinement with the arms of the switch-levers, so that when the switch is turned up by the weight the arms will engage between the contact-pieces 21 and make the circuit to emanate from the outside lines. The outside circuit is made up of wires w^4 and w^5 , leading from the outside generating source and having their terminals secured to binding-posts 22 in the conducting-plates 20, as shown in the drawings, Fig. 1.

To the middle of the arbor or shaft 5 is secured the lower end of the weight-arm 23 by means of a fastening screw or bolt 24 let through the arbor and extending into a threaded socket in the base of the weight-arm, as shown in Fig. 2 of the drawings. The weight-arm is preferably bent at an angle about its middle, as shown, and on the angular portion is mounted a weight 25, the passage through the weight being provided with a non-conducting-sleeve 26, in which the arm is snugly fitted, and the sleeve and arm are then secured against displacement by means of a set-screw 27. In the weight is fixed a staple 28, to which is secured the end of the wire 29, which holds the weight in its upward location.

In Fig. 5 are delineated in a conventional diagram a stage and an auditorium of a public hall or theater, and in suitable location either under the floor of the stage or in the ceiling or in any other vulnerable position or place are mounted a suitable number of pulleys 30, on which the wire 29 is arranged in reverse loops, as shown. The wire has one end anchored and thence is extended about the pulleys and has its other end connected to the staple in the weight. At intervals in the wire 29 are coupling-fuses adapted to separate at a comparatively low heat. The coupling-fuses are indicated by the reference 31. It will be readily seen that should the wire 29 separate at any one of the fuses the weight will be free to drop, and thus reverse the switch and break the house-circuit and make the outside or main circuit so that the interval between the lights going out and their restoration will be of short duration. In Fig. 1 of the drawings the switch is in the position to close the house or local circuit and the lights will illumine as long as the circuit is not disrupted; but should undue heat or a blaze reach any portion of the wire provided

with the coupling-fuses the coupling will be separated and the weight will immediately fall, thus shutting off the house-circuit and putting out the lights, and almost immediately the switch will be reversed and close the outside circuit and send the current through the switch to the light-circuit and restore the lights. This will prevent darkness and the usual panics accompanying such exigencies and at the same time afford ample opportunity to ascertain the locality of the danger by those best fitted to encounter and conquer it.

Having thus described my invention, what I claim is—

1. The combination with a lighting-circuit, of a local energy-circuit and a public energy-circuit, both of said circuits being normally open, and means included in the lighting-circuit and automatically operative to close the public energy-circuit, and fusible means to maintain said first-mentioned means in a position to close the local energy-circuit.

2. The combination with a lighting-circuit, a local energy-circuit, a public energy-circuit, of a switch arranged in the lighting-circuit and operative to automatically close the public energy-circuit, and a fusible connection to hold the switch in position to close the local energy-circuit.

3. The combination with a lighting-circuit, a normally open local energy-circuit and a normally open public energy-circuit, a switch in the lighting-circuit, means to operate said switch to close the public energy-circuit, and a fusible connection to support the switch in position to close the local energy-circuit and prevent the movement of said switch-operating means.

4. The combination with a lighting-circuit, a normally open local energy-circuit and a normally open public energy-circuit, of a reversible switch in the lighting-circuit, means to move said switch to close the public energy-circuit when free to operate, and a fusible line secured to said means and arranged to maintain said means inoperative, whereby the switch normally closes the local energy-circuit.

5. In a local lighting system, a local lighting-circuit, an independent or public circuit, a reversible switch to open and close either of said circuits, a weight to detach the switch from the local circuit and engage in the independent circuit to close it, a plurality of revoluble pulleys arranged in opposite series, a fusible line mounted on the pulleys and having one end connected to the weight, whereby when the fusible line is separated at any point the weight will descend and the switch will break the local circuit and reverse and close the public, as specified.

6. The combination with a lighting-circuit, a normally open local energy-circuit, and a normally open public energy-circuit, of a switch arranged to close either of said energy-

circuits, weight carried by the switch and operative to move the switch to close the public energy-circuit, and fusible means to maintain the switch against operation by the weight and
5 in a position to close the local energy-circuit.

7. A switchboard carrying terminals of a lighting-circuit, a local energy-circuit having terminals secured to said board, a public energy-circuit having terminals secured to the
10 board, a switch having electrical connection with the terminals of the lighting-circuit, a weight operative to move said switch into con-

tact with the terminals of the public energy-circuit, and means to normally prevent operation of said weight and maintain the switch 15 in contact with the terminals of the local energy-circuit.

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

THOMAS A. CAMERON.

Witnesses:

S. C. ABERNETHY,
JOHN K. CAMERON.