

(No Model.)

E. P. WARNER.
ELECTRIC SWITCH.

No. 512,774.

Patented Jan. 16, 1894.

Fig. 1

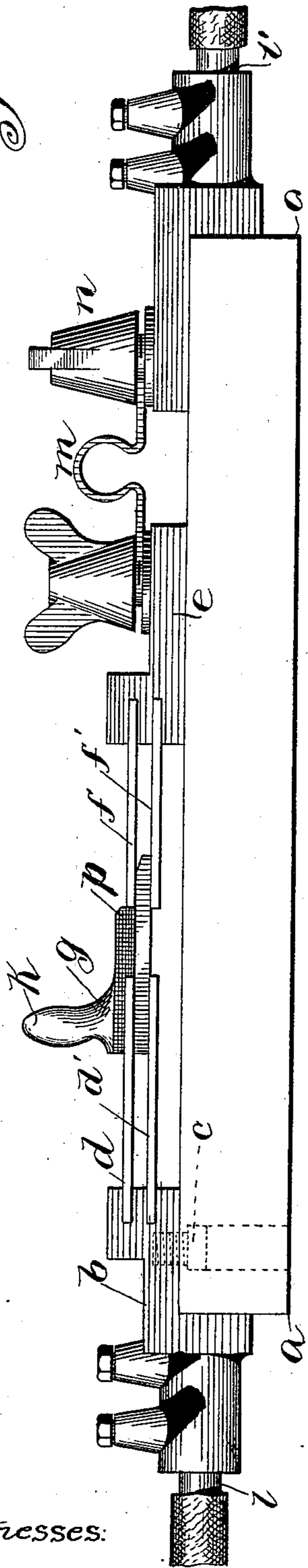


Fig. 2

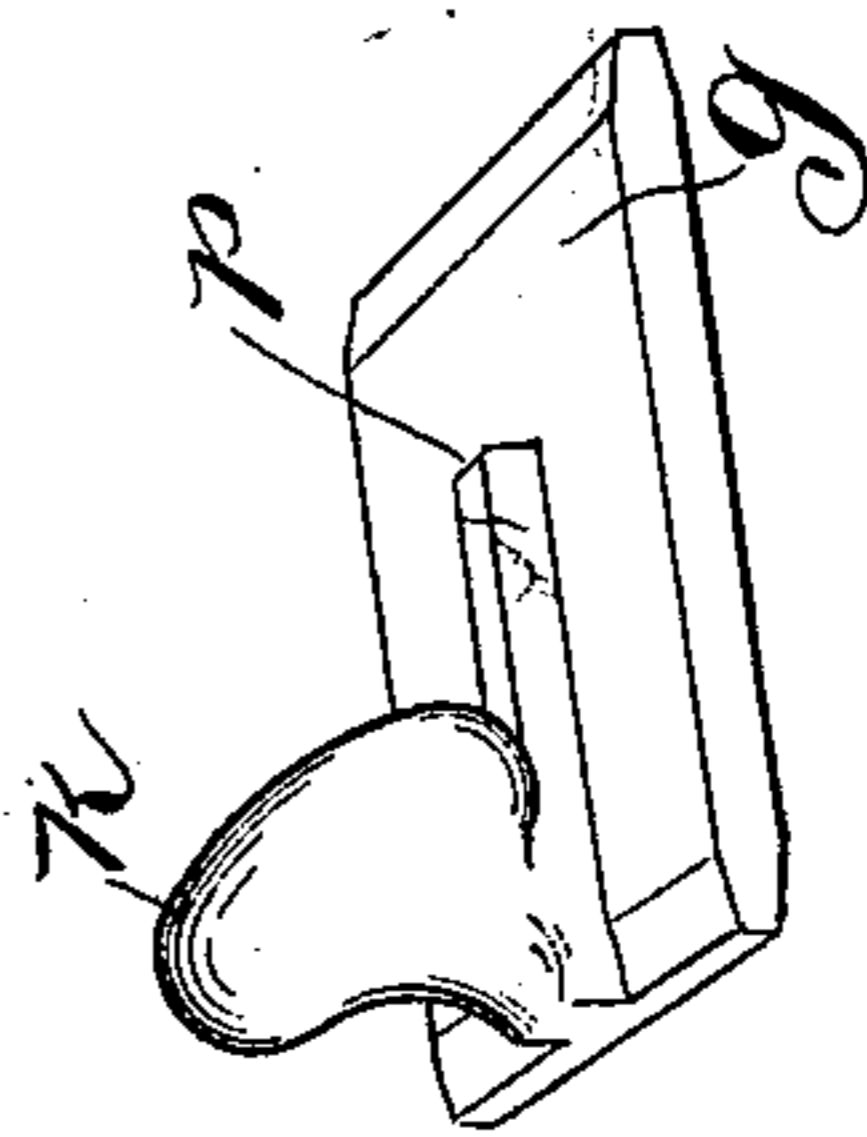
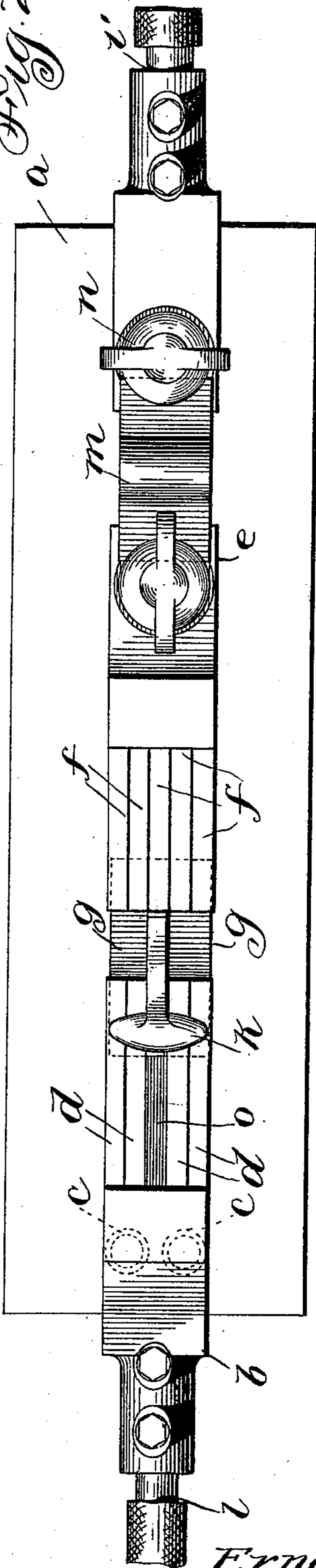


Fig. 3

Witnesses:

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UNITED STATES PATENT OFFICE.

ERNEST P. WARNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 512,774, dated January 16, 1894.

Application filed December 1, 1891. Serial No. 413,640. (No model.)

To all whom it may concern:

Be it known that I, ERNEST P. WARNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Electric Switches, (Case No. 46,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming
10 apart of this specification.

My invention relates to switches for circuits designed to convey heavy electrical currents.

Its object is to provide a compact, cheap, and easily operated switching or cut off device, having few and simple parts.

My invention consists of two pairs of contact fingers or slit contact plates, one pair being connected to each of the terminals to be
20 connected, and a switching block adapted to slide between the two members of one pair of plates, of such length as to bridge the space separating the opposed ends of the pairs of plates and make contact with the second pair
25 of plates.

My invention is especially adapted to use in connection with fuses in the mains of electric lighting and power systems. By its employment the main may be opened or severed
30 at another point than at the fuse when it is desired to replace the latter, and it may then be replaced with greater facility and safety.

The peculiar adaptability of my invention in this case is its great simplicity and compactness.
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My invention is illustrated in the accompanying drawings.

Figure 1 is a side elevation of my improved cut off in connection with a fuse. Fig. 2 is a
40 plan view thereof. Fig. 3 is a perspective view of the sliding switchblock.

Like parts are indicated by similar letters of reference throughout the different figures.

The base plate *a* is of insulating material, and the block *b* is secured thereto by screws
45 *c c'*. Upon this block are mounted the contact plates *d d'*, which are let into saw cuts and securely fastened. The block *e* is similar in construction to block *b*, previously described. This block *e* is provided also with
50 contact plates *f f'* secured thereto by being

let into saw cuts or slots in the manner described with respect to the plates of block *b*.

The switch block *g* is adapted to slide between the contact plates *d d'*. This switch
55 block *g* is of such length that the end thereof, which is in contact with the plates *d d'* will not break contact therewith when the other end has been inserted a suitable distance between the plates *f f'*. The plates *d*
60 *d'* are of sufficient length to permit the block *g* to be drawn away out of contact with plates *f f'*. The plates *d d'*, *f f'* may be constructed of phosphor-bronze of spring temper, and are made to bear upon the corresponding
65 surfaces of the block *g* with such pressure as is necessary to insure good contact between said block and the plates. The well known expedient of slitting the contact plates, as shown, may be adopted to this end.
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The block *g* is provided with a handle *k* whereby it may be more readily removed. The plate *d* is provided with a slot *o* through which the handle *k* projects and by which it is guided.
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A projection *p* upon the switch block *g* limits the motion of said block between the plates *f f'* by coming against the end of the plate *f*.

The pieces *b* and *e* are provided with suitable binding posts,—one, that of *b*, being
80 adapted to receive the end of a main *l*, and the other *e* adapted to clamp one end of a fusible strip *m*. The other end of the fuse is secured to the binding post *n*, adapted to receive main *l*.
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The switch is shown in its closed position in the drawings. When it is desired to open the switch, the block *g* is pushed back between the plates *d d'*, out of engagement with
90 plates *f f'*. I do not limit my invention, however, to use in connection with fusible plugs. Obviously, it is equally useful in any case in which a compact and simple switching device is desired.
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Prior to my invention hand switches or cut outs had been used in arc or incandescent lighting circuits to put the lines or loops in the building into or out of circuit with the external line or street circuit leading to the
100 central station.

As to the prior state of the art reference is

made to Letters Patent No. 348,456, granted Fairchild and O'Connor August 31, 1886; No. 383,933, granted James J. Wood June 15, 1888; and No. 385,815, granted Junius E. Mayo July 10, 1888.

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

1. The combination, with the blocks, each provided with a pair of contact plates, said contact plates being let into saw cuts or slots and securely fastened to the blocks on which they are respectively mounted, of a switch block adapted to slide between one pair of said plates and adapted to enter between the members of the other pair when moved toward the same, and a stop provided on said switch block for limiting the movement thereof, substantially as and for the purpose specified.

2. The combination, with two pairs of contact plates, the corresponding members of the different pairs being placed in the same line, and the members of the different pairs being placed in parallel planes, one above the other, the upper member of one of the pairs being slotted, and a sliding switch block adapted to be moved back and forth in said slot; where-

by the switch block is adapted to make contact with the members of the pairs of contact plates, substantially as specified.

3. The combination, with the pairs of contact plates $d d'$, $f f'$, of a switch block sliding between the members of the pair $d d'$ and adapted to make contacts with the members of the pair $f f'$, said sliding block being provided with a handle adapted to travel in the guiding slot of the contact plate d , substantially as described.

4. The combination, with two pairs of contact plates, of a sliding switch block, said sliding switch block being adapted to be guided by a slot provided in the upper member of one of the pairs to form connection between the two pairs of contact plates, and a stop p provided on said sliding switch for limiting the movement of said sliding switch when the same has been moved to connect the two pairs of contact plates together, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 15th day of October, A. D. 1891.

ERNEST P. WARNER.

Witnesses:

GEORGE P. BARTON,
GEORGE L. CRAGG.