

(No Model.)

A. SWAN.
ELECTRIC SWITCH.

No. 362,469.

Patented May 3, 1887.

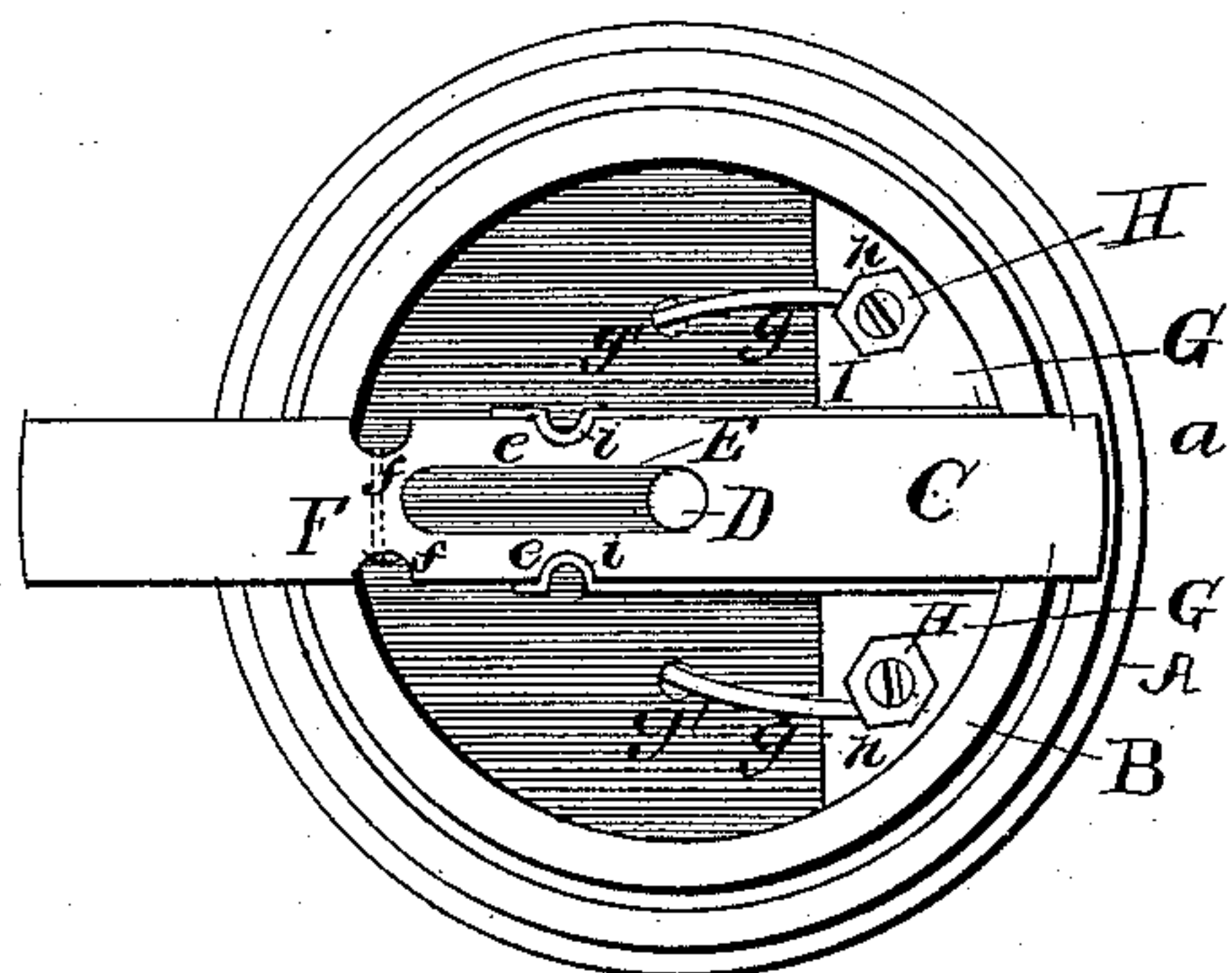


Fig. 1.

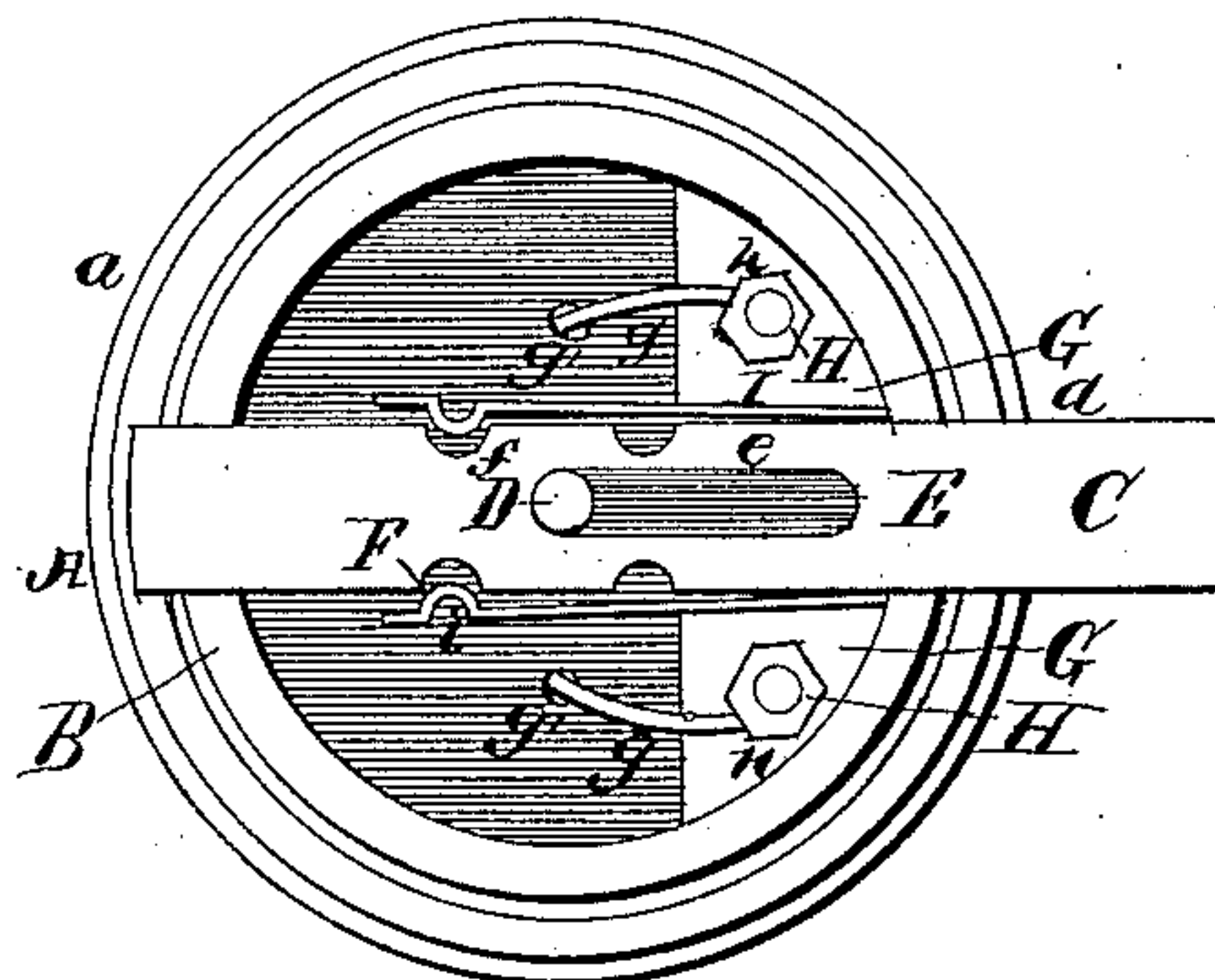


Fig. 2.

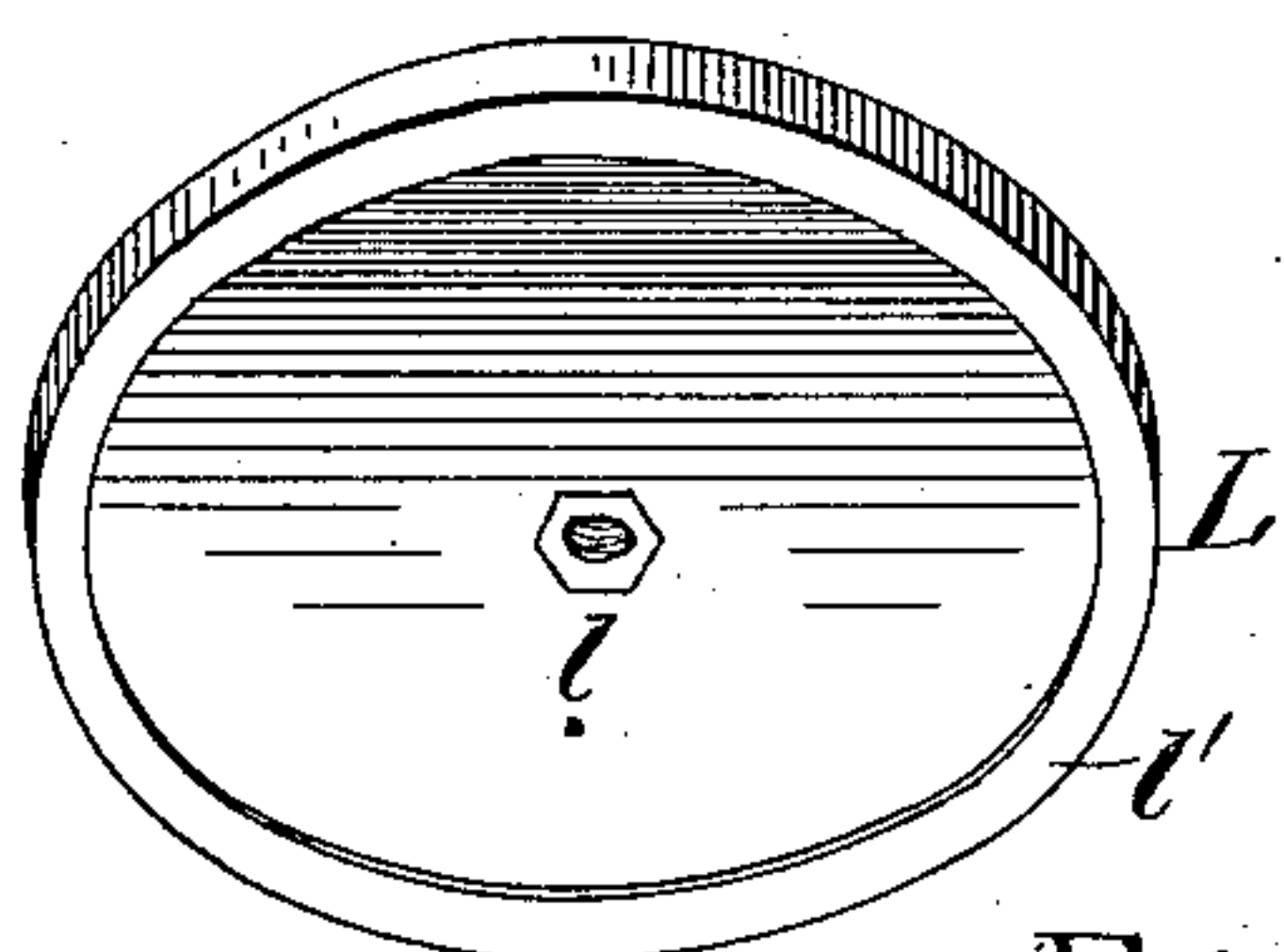


Fig. 3.

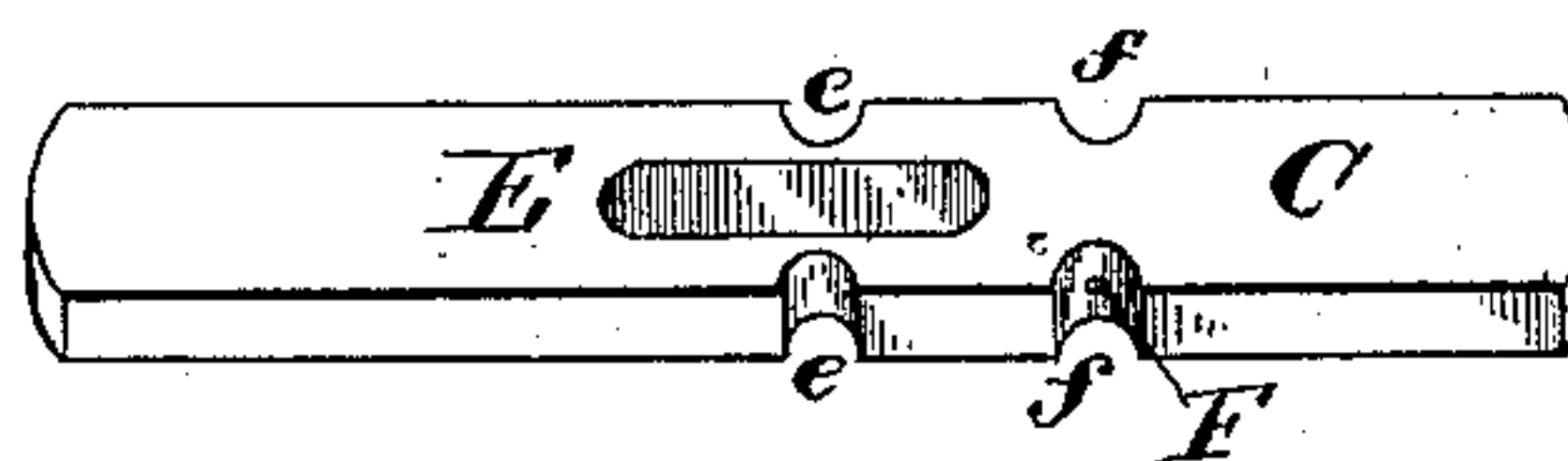
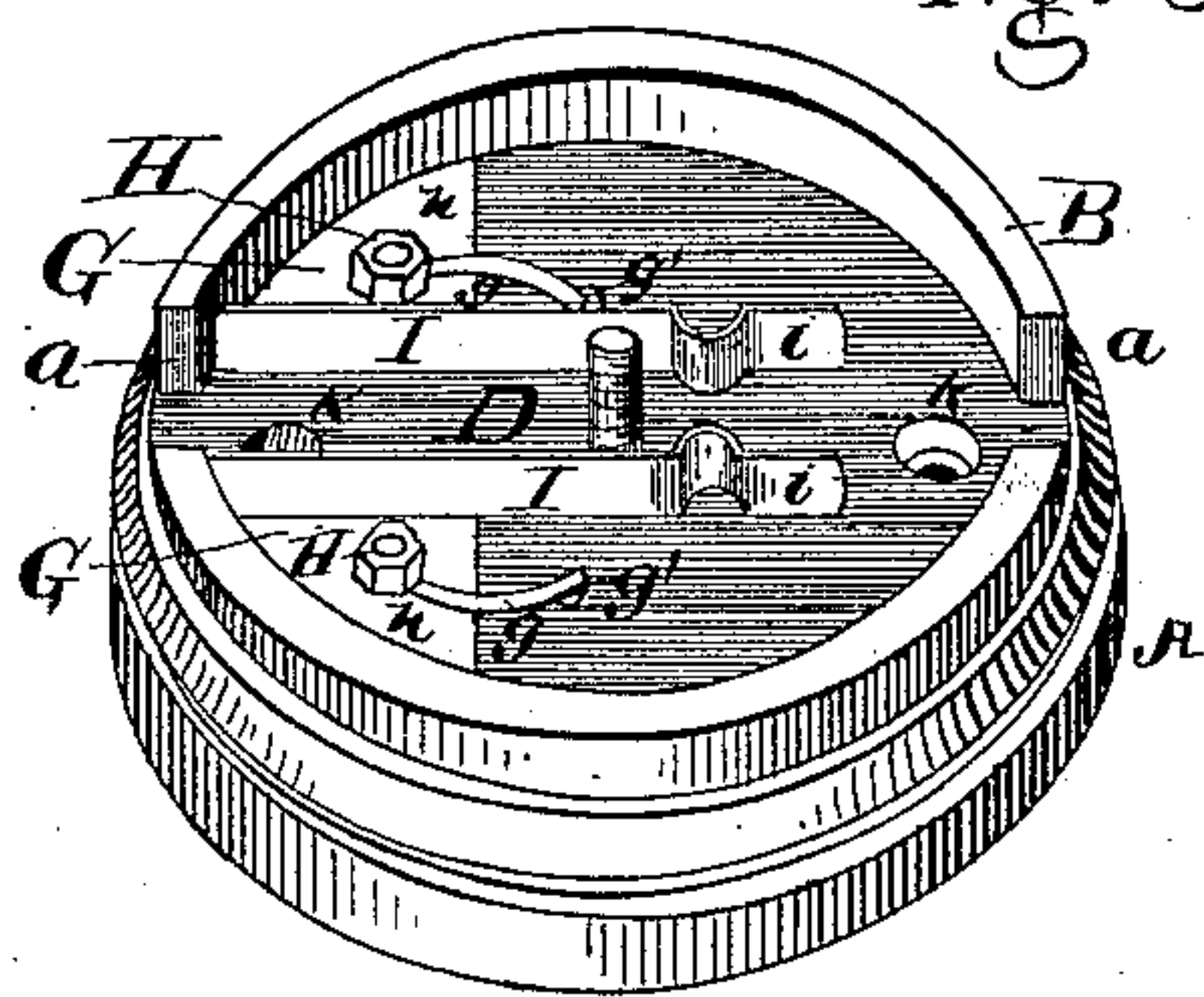


Fig. 4.

Witnessess:

W. B. McGirr.
Daniel Scott

Inventor.

Alfred Swan
Per Connolly Bros
Atty's

UNITED STATES PATENT OFFICE.

ALFRED SWAN, OF NEWCASTLE-UPON-TYNE, COUNTY OF NORTHUMBERLAND, ENGLAND, ASSIGNOR TO THE VITRITE AND LUMINOID COMPANY, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 362,469, dated May 3, 1887.

Application filed June 3, 1886. Serial No. 204,043. (No model.)

To all whom it may concern:

Be it known that I, ALFRED SWAN, a subject of the Queen of Great Britain, residing at Newcastle-upon-Tyne, England, have invented certain new and useful Improvements in Electric Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention has relation to electric switches, and has for its object the provision of a switch of novel form and construction, and which shall be simple in construction and cost but little to manufacture, yet be of great durability and easily operated, and so constructed and arranged that its parts may be readily inspected and rapidly replaced at small cost, when necessary.

It is my aim to produce a switch of such character that but few parts are necessary, and that those parts may be of such form and construction as to require but slight skill and but little manipulation or finishing in the manufacturing; and I further aim to produce a switch which, while it is comparatively of low cost, will be easy of manipulation, will be certain of operation in any and all positions, and may be easily and rapidly inspected and repaired in case of necessity.

Having these objects in view, my invention consists in the novel construction, combination, and arrangement of parts hereinafter described.

In the accompanying drawings, wherein I have illustrated my improvements, Figure 1 is a plan view of the switch complete, with the exception of the lid, which is removed to show the working parts, and the switch being in condition to break the circuit; Fig. 2, a similar view to Fig. 1, the parts being in position to establish circuit; Fig. 3, a perspective view of the switch and lid with the jack or plug removed, and Fig. 4 a perspective view of the said jack or plug.

A designates a piece of material, preferably the well-known "vitrite," forming the body or base of the switch. Said base A is of circular form, and has on its upper side an annular flange, B, cut out on each side at *a* for the

passage of a strip of insulating material, C, which forms the jack or plug, by the movement of which circuit through the switch is established and broken, as will be presently described.

Upon the base A, and, if thought desirable, embedded therein, are two triangular plates of metal, G G, formed integral with two flat springs, I I, which are bent up at right angles to the plates G G and lie on each side of the jack or plug C. The springs I I are each formed with a bead, *i*, near the end, and they have a tendency to spring inwardly and bear against the sides of the plug C. The plates G G are held down upon the base A by means of screws H H, which pass down into said base through the plates, and nuts *h*, fitting upon said screws.

The terminal wires *g g* of the electric circuit in which the switch is inserted pass through holes *g' g'* in the base A, and their ends, being uncovered, pass into or through slits cut in the screws H H, as shown, and the nuts *h h* being screwed down thereupon, a good electric contact is maintained between said terminals and the plates G G, the latter being at the same time held in position.

The plug or jack C consists of a flat strip of insulating material, preferably vitrite, whose thickness corresponds to the depth of the flange B, and of a width sufficient to slide smoothly in the notches *a a*. This plug C has a central longitudinal slot, E, for the passage of a screw-threaded pin, D, which is fixed at the middle of the base A and has notches *e* and *f* on each side. A metallic pin, F, passes through from side to side of the plug C, its ends projecting slightly into the notches *f f*, and said pin forms the medium of electric connection between the springs I I when the beads *i i* in said springs rest in the slots *f f*.

L designates the lid of the switch, which is, like the base A and the plug C, composed of insulating material, and has a shallow flange, *l'*, at its edge, which fits against the flange B of the base and forms a dust-proof joint when the lid is in position. At the center of the lid L a nut, *l*, is embedded, which is screw-threaded to receive the threaded pin D.

Countersunk holes *k k* are formed in the base

A for the reception of screws or other devices for fastening the switch to a wall, table, or the like.

The connection with the terminal wires of the circuit having been made and the lid L screwed on, the switch is in condition for operation. Supposing the jack or plug C to be in the position shown in Fig. 1—that is, with the beads *i i* pressed into the notches *e e*—the circuit is broken. To establish the circuit, it is only necessary to push against the protruding end of the strip C, thereby causing it to slide along between the springs until the beads *i i* pass into the notches *f f* and press upon the two ends of the metallic piece F. The tendency of the springs I I being always to press inwardly against the strip C, there is no danger of the latter dropping or slipping from one position to the other, whatever the position of the switch.

When it is found desirable or necessary to inspect the interior of the switch for the purpose of cleaning the contacts, making new connections, or for other reasons, the lid L is easily unscrewed and the plug C may be lifted out of the case without unloosening or disturbing any of the other parts.

An important advantage which my invention possesses is that all non-metallic parts may be cast or molded complete, and do not require any finishing or other manipulation after casting, and hence may be made of glass or other

material which can be readily molded or cast into form, but which is hard or impossible to cut or work. I prefer, however, as before said, to form these parts of vitrite.

Having described my invention, I claim—

1. In an electric switch, the combination, with a base and a screw-threaded pin set therein, of a lid having an embedded screw-nut adapted to receive said pin, substantially as described.

2. In an electric switch, the combination, with a base having an annular flange cut away at each side and contact-pieces secured within said flange, of a plug of insulating material adapted to fit and slide in the space cut out of said flange and having a metallic pin or piece extending from side to side, substantially as described.

3. In an electric switch, the combination, with a suitable base and contact-springs I I, secured thereto and provided with beads *i i*, of the sliding plug C, having notches *e e* and *f f* on each side, and the metallic piece or pin F, projecting at each end into the notches *e f*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of April, 1886.

ALFRED SWAN.

Witnesses:

THEODORE MACE,
SYDNEY CLARKE HOOK.