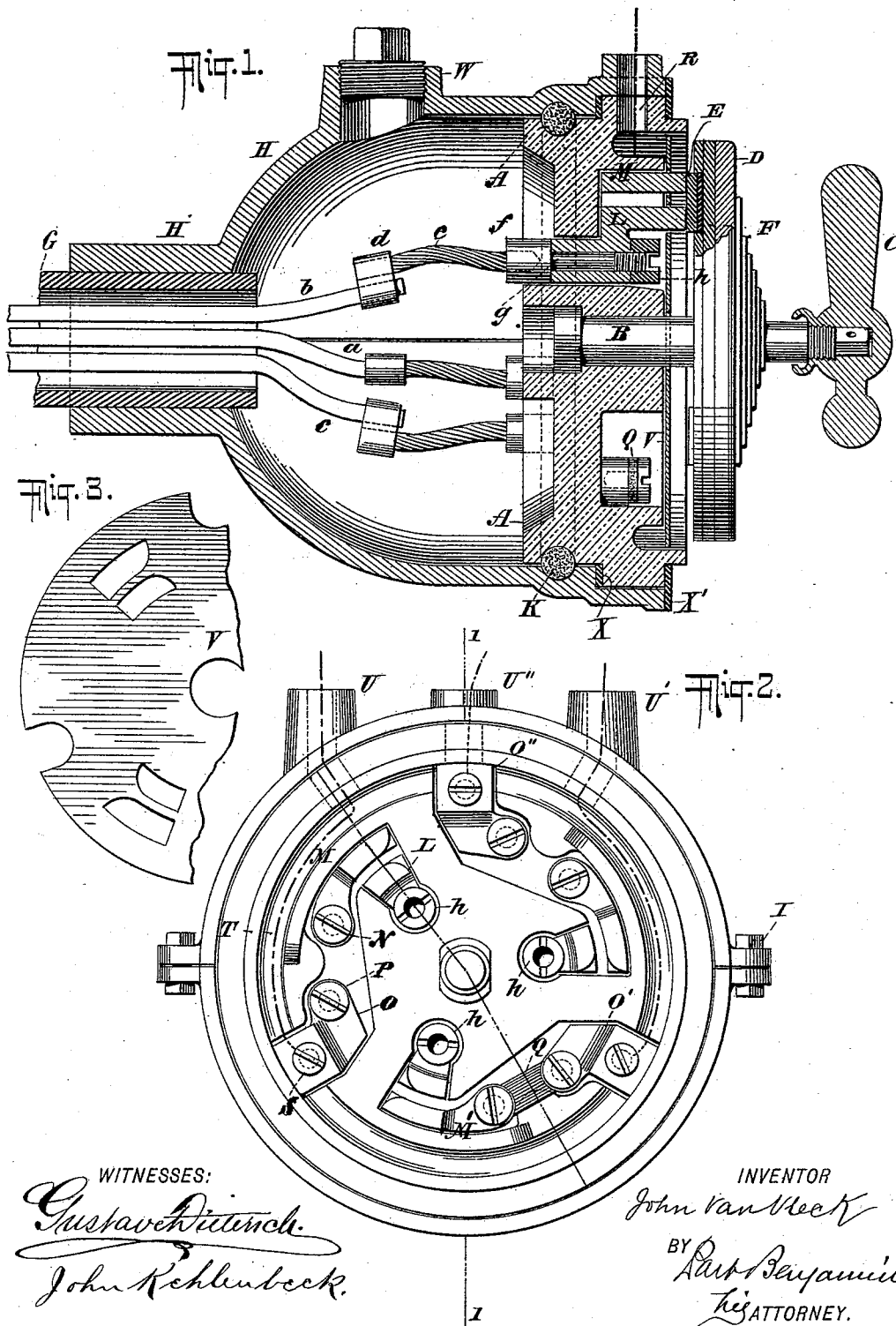


(No Model.)

**J. VAN VLECK.**  
**SERVICE END, CUT-OUT, AND SWITCH BOX FOR ELECTRIC**  
**LIGHTING CIRCUITS.**

No. 530,141.

Patented Dec. 4, 1894.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JOHN VAN VLECK, OF NEW YORK, N. Y.

SERVICE END, CUT-OUT, AND SWITCH-BOX FOR ELECTRIC-LIGHTING CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 530,141, dated December 4, 1894.

Application filed May 28, 1894. Serial No. 512,596. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN VAN VLECK, of the city, county, and State of New York, have invented a new and useful Improvement in Service Ends, Cut-Outs, and Switch-Boxes for Electric-Lighting Circuits, of which the following is a specification.

The object of my invention is to provide a convenient device for connecting the service ends of electric lighting mains with the house conductor or mains so that the connection may be permanent, fireproof, and waterproof and yet be easily made and broken and also so that the current may be turned on or off with respect to the house by a simple switch mechanism, and with the same facility as water or gas.

In the accompanying drawings Figure 1 is a sectional view of the device on the line 1—1 of Fig. 2. Fig. 2 is a face view with the switch cover and handle removed. Fig. 3 shows a portion of the mica intercepting plate.

Similar letters of reference indicate like parts.

The form of switch here employed is that known as the Johnson vise switch and is now in common use. It embodies a base, A, which is, of course, porcelain or other insulating material. Passing through said base is a central post, B, which receives the switch handle C and carries a disk, D, of insulating material, upon which disk are metallic contact plates, E. The movement of this disk by the handle C is resisted by a coiled spring, F. This arrangement of disk having contact plates E and provided with the spring F for the purpose specified constitutes no part of my invention, but is simply imported here for purposes of convenience.

G represents the service tube which contains the three main wires *a b c*; these wires being part of a three-wire system of distribution in which *a*, for example, is the neutral wire. The tube G is received in a projection H' on the hollow metal box, H, which is cast in two portions secured together by bolts, as shown at I in Fig. 2. In the open end of the box H is seated the porcelain base A and the joint is made tight by a hemp or other gasket, K. After the base A is seated in the box

H, any suitable cover may be applied. This cover is not shown in the drawings.

The wires *a, b* and *c* are all connected to the switch mechanism by similar means as follows: Each wire, say, for example, *b*, is secured by means of a coupler, *d*, to a short length of a flexible cable, *e*, the end of which is fastened in the head, *f*, of a screw-bolt, *g*. This bolt is received in a circular opening in the metal contact piece, L, which is seated in the porcelain base A and is secured by a nut *h*. Opposite the contact piece L is another contact piece, M, similarly seated. It will be apparent that the contact plate E on the disk D extends across from the plate M to the plate L and therefore establishes electrical connection between them, when the handle C is so turned as to bring said plate E in proper position. At one end of the plate M is a clamping screw, N. Seated in the base A is a metal block, O, also having a clamping screw, P. Between the clamping screws N and P is to be a safety catch, Q. In Fig. 2, between the clamping screws marked M and O, no safety catch appears; but the safety catch Q is shown between the pieces M' and O' corresponding to M and O on the right-hand lower side of the drawings. The block O comes opposite an opening, R, in the porcelain base and has itself an opening into which enters the clamping screw S. Into the opening closed by the clamping screw S enters one of the house wires, as shown in dotted lines at T. This wire extends out of the tube U, which is formed on the metal box H. On the other side of the metal box H is a similar tube, U', through which passes the other house wire, which connects with the block O' similar to block O. Through the middle of the tube U'' may enter the neutral wire which connects with the block O'', also similar to block O. It will be understood, then, that the circuit from wire *b*, for example, proceeds to the flexible section *e* to the bolt *g*, to the contact block L, and when communication between this block L and block M is closed by the switch-plate E to said block M, thence to the safety catch as represented at Q, thence to the block O to wire T, and so out. The lead of the other wires is the same.

The mica plate V, shown in Fig. 3 separately, is intended to prevent splashing of the metal in case the safety catch Q should burn out upon the contact plate of the switch.

- 5 At W is provided an opening in the box H closed with a screw plug. Through this opening, after the parts are all put in place as described, the box is filled with any suitable waterproof or fire proof insulating compound. A soft rubber gasket, X, is introduced between the porcelain base A and the box H, and also a similar gasket X' may be placed between the rim of the box and the cover (not shown). It will be evident that
- 10 by removing the bolts I, the parts of the box H may be separated and the lower portion as shown in Fig. 2, entirely removed, thus affording access to the space within said box.

- By the term "service-tube," I mean a tube of iron, containing conductors embedded in a suitable insulating compound.

I claim—

1. The combination of the box H constructed in two detachable portions, circuit
- 25 conductors, as *a b c*, entering one end thereof, a base, A, of insulating material received in the opposite end, switch mechanism mounted on said base and having rigid conductors, as *g*, and flexible conductors, *e*, within said box,
- 30 connecting said conductors *a b c* with said rigid conductors *g*, substantially as described.

2. The combination of the box H, having a tubular projection, H', adapted to receive a tube, G, containing circuit conductors, as *a*,
- 35 *b, c*, a base, A, of insulating material received in the opposite end of said box, a switch mechanism mounted on said base and provided with contact blocks, L, bolts, *g*, entering said blocks L and extending through said

base, and flexible conductors, *e*, within said box connecting said blocks L and conductors *a, b, c*, substantially as described.

3. The combination, in a switch box, of the case H made in two detachable portions, one portion being provided with the tubular projections U, U', U'', and semi-tubular projections on both portions uniting to form the tubular projection H', a service conductor entering said box through said tubular projection H' and having circuit wires *a, b, c*:
- 45 house mains entering through said projections U U' U'' and a switch mechanism received in said box H and interposed between said house mains and said circuit wires *a, b, c*.

4. The combination of house mains and a service cable having conductors, *a, b, c*, provided with flexible end portions, *e*, and, at their extremities, threaded bolts, *g*, a box, H, inclosing said end portions and bolts, and a switch mechanism secured to said box and
- 55 connected with said house mains and said bolts *g*.

5. The combination, in a switch box, of the base A of insulating material, the conducting blocks L and M and O therein, safety catch Q interposed between blocks M and O, a switch mechanism supported on said base A and adapted to make and break circuit between blocks L and M, box H made in two detachable portions receiving base A, a circuit conductor, *b*, entering said box H, and means of connecting conductor *b* and block L within said box H.
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Witnesses:

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