

No. 729,172.

PATENTED MAY 26, 1903.

E. M. HEWLETT.
HIGH POTENTIAL LINE SWITCH.
APPLICATION FILED AUG. 18, 1900.

NO MODEL.

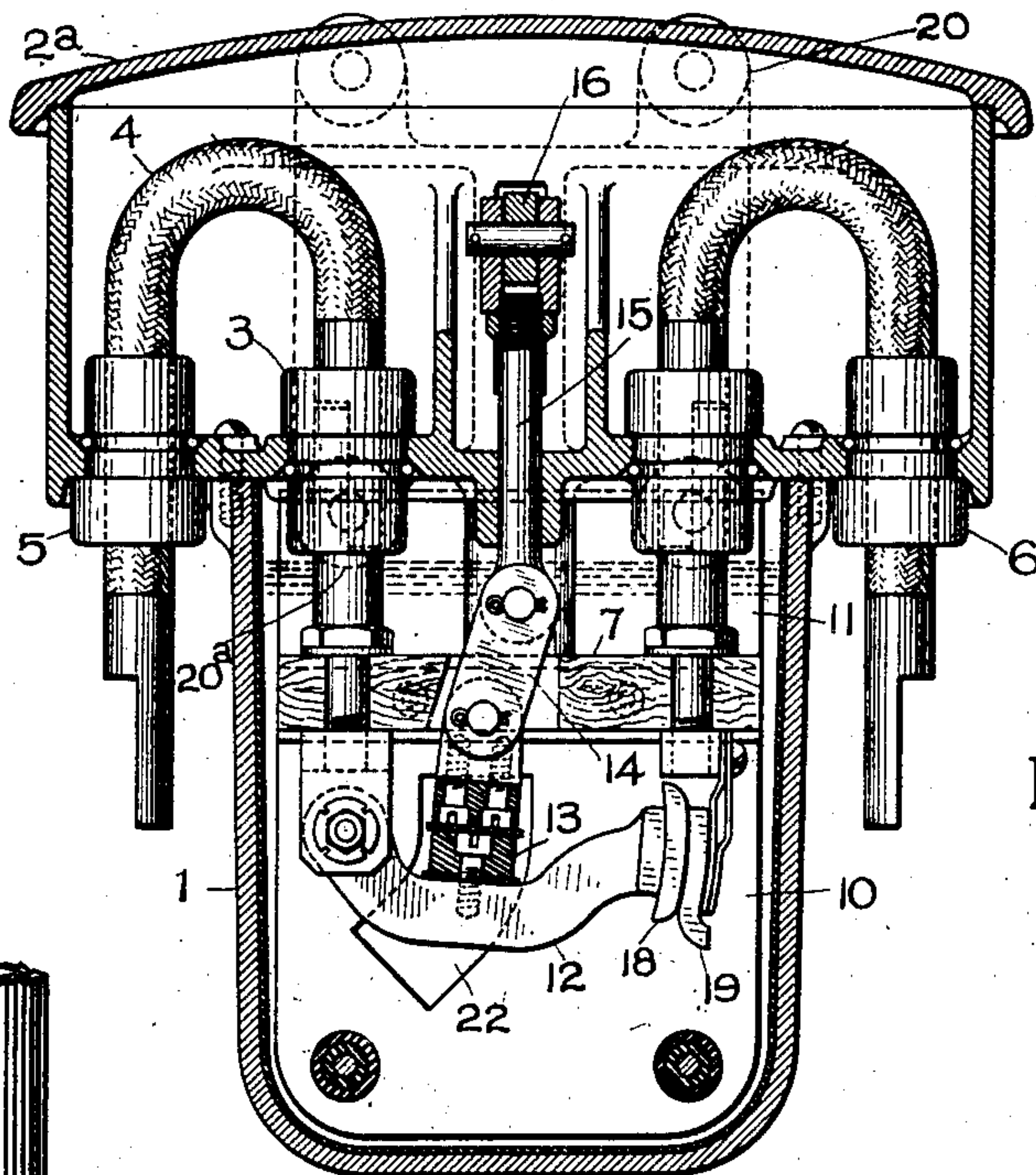


Fig. 1.

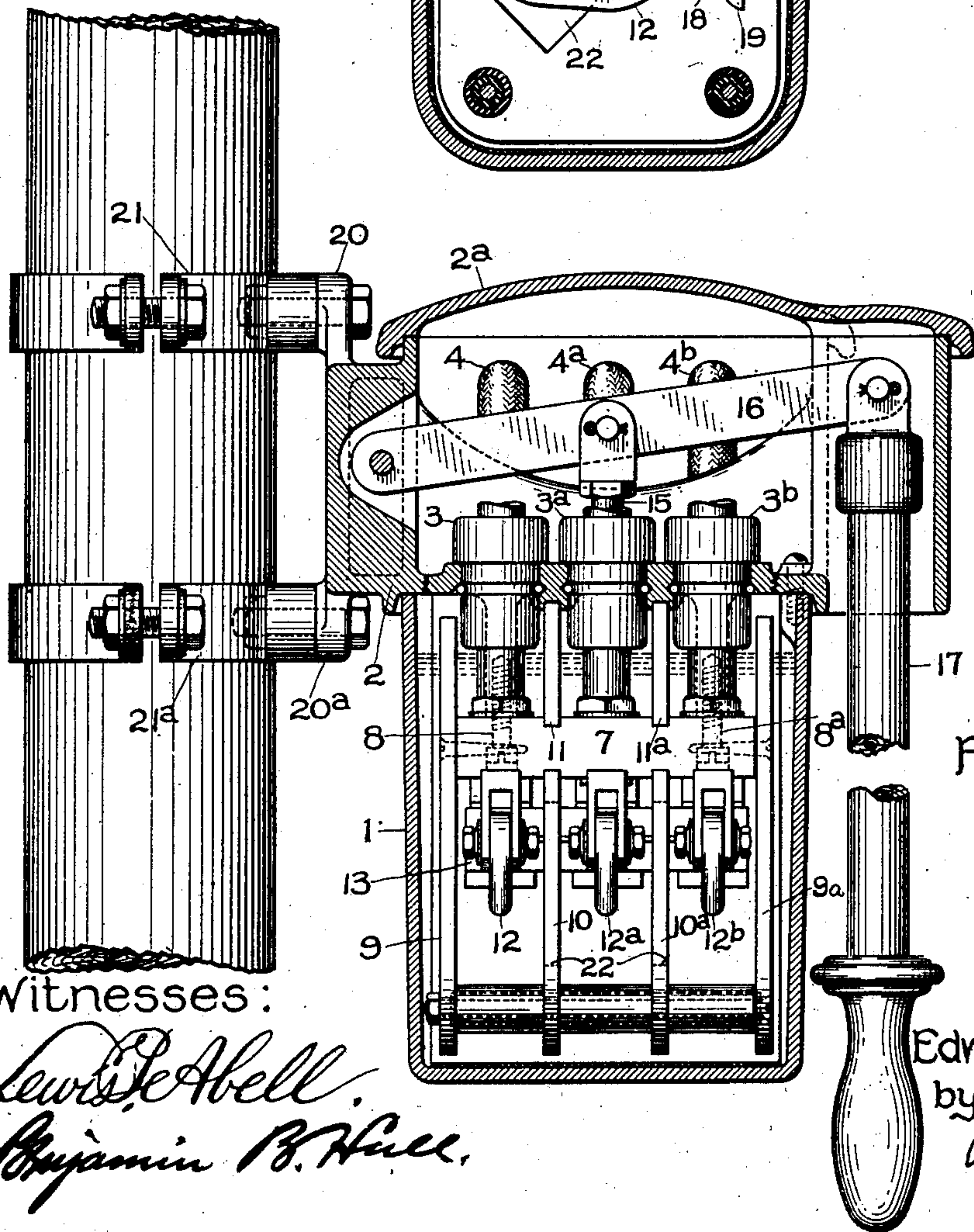


Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

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GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

HIGH-POTENTIAL LINE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 729,172, dated May 26, 1903.

Application filed August 16, 1900. Serial No. 27,038. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HEWLETT, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in High-Potential Line-Switches, of which the following is a specification.

This invention relates to switches for high-potential currents. It is particularly designed for use out of doors with alternating currents of high potential, the object being to render the manipulation of the switch safe, provide for its support on a pole where it is not dangerous to people or animals, and to permit it to safely interrupt high-potential currents of large amperage.

In carrying out the invention I provide a fluid-tight vessel with means for support upon a pole and adapted to contain an insulating liquid, such as oil. The vessel is provided with a removable cover to permit filling and easy access to the terminals and other parts of the switch and with an enlarged top, on the under side of which are insulators to which the line-terminals may be led. Barriers of insulating material immersed in the oil are provided to surround the points where the circuit is opened, and a long handle depending from the controlling-lever is provided by which the attendant may safely operate the switch.

The invention involves features of construction the novelty of which will be more fully pointed out hereinafter and definitely indicated in the claims appended to this specification.

In the accompanying drawings, Figure 1 is a sectional view of a switch embodying my improvements, and Fig. 2 is a sectional view on a plane at right angles to that shown in Fig. 1.

1 represents an oil-tank lined on the bottom and two sides with insulating material, as seen in Fig. 1, and provided at the top with a number of integral lugs to accommodate set-screws securing the hollow cover 2, on top of which is a removable lid 2^a. The bottom of the cover is provided with a number of openings to accommodate porcelain bushings 3 3^a 3^b. The particular type

of switch shown is intended for use with tri-phase alternating currents. There are two rows of these bushings, as indicated in Figs. 1 and 2, through which pass leads 4 4^a 4^b, being introduced into the cover through corresponding rows of bushings, as 5 and 6, supported in openings formed in an overhanging part of the hollow cover. The terminals are bolted to a block of wood or other insulating material 7, fastened by screws 8 8^a (see Fig. 2) to integral lugs, (shown in dotted lines in Fig. 2,) depending from the bottom of the cover. The block of wood also serves as a support for barriers of insulating material, as 9 9^a, which separate the contacts from the side walls of the oil-well and from each other. Intermediate shorter barriers 10 10^a and 11 11^a are held in place between the wooden block and an insulated bolt extending across the barriers 9 9^a or between the block and grooves formed in the under side of the cover. These barriers rise above the surface of the oil. To the terminals at one side are pivoted a plurality of movable arms, as 12 12^a 12^b, connected together by a yoke of insulating material 13, on which is an insulated standard connected by a link 14 with a rod 15, pivoted to a lever 16, fulcrumed on one side of the cover in a recess formed in the casting and carrying at its outer end a pendent long handle of insulating material 17, extending well below the parts of the switch, so as to render its manipulation safe to the operator. The outer ends of the contact-arms 12 are provided with contact-shoes 18, engaging cooperating shoes 19, mounted on spring-supports fastened to the ends of the opposite terminals. The hollow cover is provided with integral arms, as 20 20^a, to which are bolted curved castings 21 21^a, which cooperate with corresponding castings to secure the switch to a pole or other support, suitable bolts to draw the parts into tight engagement with the post being provided, as indicated in Fig. 2. The several contacts are below the surface of the oil, and the wooden support is slotted to permit the necessary movements of the link connecting the controlling-lever with the movable contacts. The insulating-bridge 13 passes through curved slots, as indicated at 22 in Fig. 1,

these slots being formed in the barriers to permit the necessary movement of the parts controlling the switch. The cover overhangs the oil-well and is provided with drip-flanges to prevent access of water to the inside of the switch. Thus by raising or lowering the handle 17 all points of contact are simultaneously opened or closed, the break occurring in oil and arcing being thereby prevented. With this organization after the apparatus is once installed inspection of its condition is easily made and the switch may be controlled without contact of the operator with any live parts or without bringing him into dangerous proximity to any of these parts.

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

1. A line-switch for high-potential currents, comprising a casing containing an insulating liquid submerging the contacts, clamps for attaching the casing to a pole or other support, an overhanging top for the casing, and insulators on the under wall of the overhanging top, through which the line-terminals may be led.

2. A line-switch for high-potential currents, comprising a casing containing an insulating liquid, overhanging portions of the casing, line-terminals leading to the under side of the same, an operating-lever for shifting the contacts, and an opening through which a long insulated handle may lead to the lever to operate the switch.

3. A switch for high-potential currents, comprising a casing containing an insulating liquid, a cover for the same, circuit-terminals within the casing, a pivoted contact conductively journaled on one terminal and adapted to make contact with the other, an insulated

connection of the movable contact with an operating-lever, an opening in the casing beneath the cover and a long insulated handle to operate the switch.

4. A high-potential line-switch for polyphase alternating currents, comprising a casing, an insulating liquid therein in which the contacts are effected, a cover for the casing, terminals for each of the polyphase line-wires, an insulating-support for said terminals beneath the level of the insulating liquid, movable contacts, insulating-walls separating the several contacts from each other, and a common operating means for the contacts of all the lines connected beneath the cover, to a long handle of insulating material.

5. A line-switch for alternating currents, comprising an oil-well, terminals, contacts, insulating-barriers at the sides of the contacts forming a series of independent compartments for the several contacts, an insulated yoke connecting the movable contacts below the surface of the oil, an operating-lever linked to the yoke, means permitting the control of the lever from below the switch, and a cover overhanging the operating parts.

6. A switch for alternating currents, comprising an oil-well, terminals below the oil-surface, a plurality of pivoted bridges connecting the several terminals, an insulating-yoke connecting the bridges, slotted barriers at the sides of the bridges in which the yoke may move, and an operating-lever linked to the yoke.

In witness whereof I have hereunto set my hand this 14th day of August, 1900.

EDWARD M. HEWLETT.

Witnesses:

BENJAMIN B. HULL,
MARGARET E. WOOLLEY.