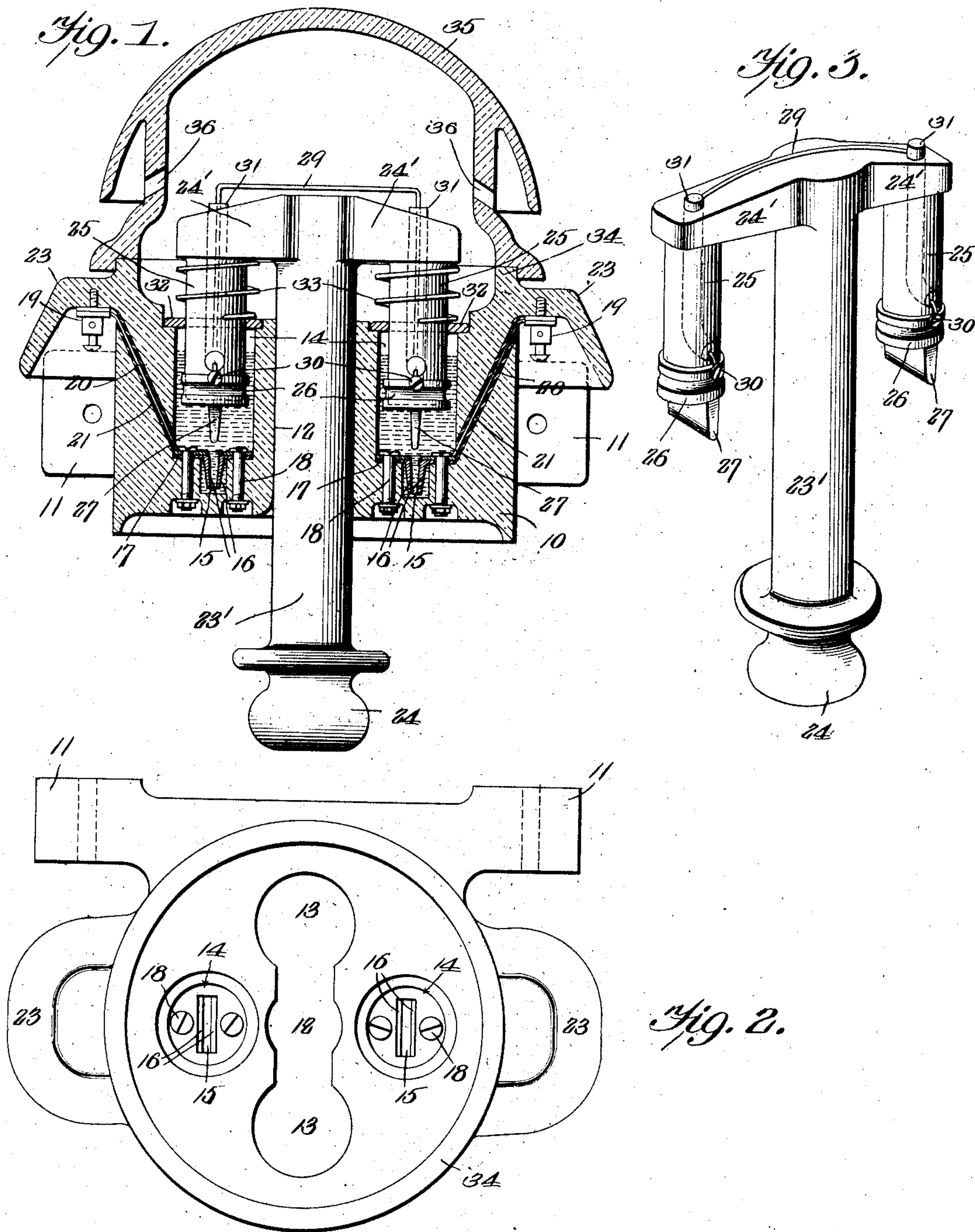


No. 876,055.

PATENTED JAN. 7, 1908.

C. H. HOLLEY.
SWITCH.

APPLICATION FILED JUNE 16, 1905.



Witnesses

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SWITCH.

No. 876,055.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed June 16, 1905. Serial No. 265,629.

To all whom it may concern:

Be it known that I, CARL HIRAM HOLLEY, a citizen of the United States, residing at Visalia, in the county of Tulare and State of California, have invented a new and useful Switch, of which the following is a specification.

This invention relates to apparatus for the protection of electric circuits and translating devices from high voltage currents, and the like, and has for its principal object to provide a combination switch and fuse in which any are that may form on the separation of the switch members will be instantly extinguished.

A further object of the invention is to provide a switch in which the circuit closing terminals are inclosed in separate oil receptacles.

A further object of the invention is to provide a switch of the type described in which the fuse arranged between the terminals of the movable switch member, has but a small portion of its length submerged in the oil, so that in case the fuse blows the oil will not be disturbed.

A still further object of the invention is to provide a switch which may be safely operated without danger of setting fire to surrounding inflammable material, and without danger of injury to the operator.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a sectional elevation of a switch constructed in accordance with the invention. Fig. 2 is a plan view of the base of the switch, the cap and movable switch member being detached. Fig. 3 is a detail perspective view of the movable switch member.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The body or base of the device is formed

of porcelain or similar insulating material, and is approximately cylindrical in form. Projecting from one side of the base 10 are suitable lugs 11 having perforations for the passage of screws or similar securing devices 60 for holding the switch in place.

The base is provided with a centrally disposed opening 12 which is extended in a diametrical line and communicates with two passages 13, disposed at equal radial distances from the center of the base. The base is further provided with two wells 14 that are disposed at points diametrically opposite each other, and in a plane at a right angle to a plane including the axes of the two passages 13. The body of each well is extended to form a small compartment 15 for the reception of pendent tongues 16 carried by, or forming a part of metal clips 17 that are secured in position by suitable bolts 18. These clips are connected to main line binding posts 19 by wires 20 that extend through suitable openings formed in the base, the upper ends of the openings being arranged above the level of the oil in the wells in order to prevent leakage, and preferably these openings contain a filling material 21 of vulcanized fiber or the like in order to prevent leakage of the oil. The binding posts 19 are protected by a petticoat 23 that are preferably formed integral with the base.

The movable switch member comprises a central vertically movable bar 23' that extends through the opening 12, and is provided at its lower end with an operating handle 24. At the top of the bar 23', and preferably formed integral therewith, are two oppositely extending arms 24' carrying vertically disposed parallel stems 25, the central bar, the arms, and stems 25 being preferably formed of porcelain or similar insulating material.

The two stems 25 extend down into the wells 14, and their lower ends are submerged in oil. To the lower ends of the stems are secured metallic collars 26 carrying metallic switch blades 27, which, when forced down between the pendent tongues 16, serve to close a circuit between the two binding posts 19. Each of the stems 25 is provided with an opening for the passage of a fusible wire 29 which may be formed of any suitable material, the opposite ends of the wire being secured to the metallic collars 26 by suitable binding screws 30. The fuse preferably ex-

tends through tubes 31, placed in the openings in the stems 25, said tubes being formed of vulcanized fiber or similar material. Each of the wells 14 is covered by a ring 32 that fits snugly around the stem 25, and is held down to its seat by a coiled compression spring 33.

The upper portion of the base is provided with an annular flange 34, on which is fitted a cap or cover 35, provided with openings 36 for ventilating purposes and to permit the escape of fumes in case of the blowing of a fuse.

In placing the switch member in position, its two arms 24' are turned to a position in alinement with the passages 13 of the base, and the handle bar 23' is pushed upward in order to introduce the arms and the stems above the base, after which the handle is turned to the extent of ninety degrees, and the stems are lowered into the wells which have previously been supplied with a heavy mineral oil. When the handle is pulled down and the blades 27 are entered between the tongues 16, a circuit is closed between the two binding posts, the current traveling over the fuse wire which latter is of sufficient size to carry the desired strength of current and being destroyed as soon as this is exceeded. When the handle bar is pushed up, the blades move from contact with the tongues 16, and any arc which may be formed due to the separation of the terminals, is instantly extinguished by the oil. Should a heavy current be sent over the line, the fuse will blow, but this will occur above the level of the oil, so that there will be no danger of the oil being blown out of the wells.

Having thus described the invention, what is claimed is:—

1. In a device of the class specified, a base having a pair of spaced independent oil containing wells, and provided with a pair of laterally projecting hoods, binding posts secured to the base and shielded by said hoods, submerged terminals at the bottoms of the wells, electrical conductors extending from the terminals to the binding posts and passing through openings in the base, the upper ends of said openings being in a horizontal plane above the level of the oil to prevent the

escape of the latter, a movable switch member comprising a bar, arms projecting therefrom, stems carried by said arms, circuit closing blades carried by the stems and arranged to engage with the terminals, the base having a vertical passage for the bar, said passage being widened to permit the passage of the stems and arms, and the bodily removal of the switch member through the bottom of such base member.

2. In a device of the class specified, a base member having a pair of spaced independent oil containing wells and provided with a central passage between the wells, the passage being widened transversely, a pair of arms, a bar carrying the same, and movable vertically and revolubly in the central opening, a pair of stems carried by said arm, circuit closing members carried by the stems, submerged terminals at the bottoms of the wells arranged to be engaged by the circuit closing members, and a cap or dome covering the base and spaced thereabove a distance sufficient to permit the insertion and removal of the switch member through the central opening of the base.

3. In a device of the class described, a base member having a pair of spaced and independent oil containing wells, submerged terminals disposed in the wells, current conductors connected to the terminals, there being openings formed in the base for the conductors, the upper ends of said openings being disposed above the level of the oil, a vertically movable switch member comprising a central bar, a pair of arms extending therefrom, stems depending from the bar and provided with openings, metallic collars secured to the ends of the stems and having blades arranged to engage with the submerged terminals, a fusible connection between the collars, well covering rings through which the stems extend, and springs surrounding said stems and tending to hold the rings in place.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CARL HIRAM HOLLEY.

Witnesses:

H. H. HOLLEY,

W. W. SHANK.