

Search history

Search PN=(WO2018006768) (Results 1)
1:

Search fn=(63489517) (Results 1)
2:

Search [SP]: electrically conductive loop of circuit breaker boucle electriquement conductrice d'un disjoncteur an electrically conductive loop of a circuit breaker, comprising: an infeed contact group (121, 122), an outfeed contact group (131, 132) and a conductive assembly (115, 111, 112). the infeed contact group (121, 122) is connected to an infeed terminal (123), while the outfeed contact group (131, 132) is connected to an outfeed terminal (133). the conductive assembly (115, 111, 112) includes a soft-connected assembly (115) and a hard-connected assembly (111, 112) the hard-connected assembly (111, 112) is fixed on a base of the circuit breaker the soft-connected assembly (115) is connected to the infeed contact group (121, 122) and the outfeed contact group (131, 132) the soft-connected assembly (115) and the hard-connected assembly (111, 112) are connected to provide an electrically conductive loop between the infeed contact group (121, 122) and the outfeed contact group (131, 132). the infeed contact group (121, 122) and the outfeed contact group (131, 132) are mounted coaxially. by combining a soft connection and a hard connection, the electrically conductive loop utilizes the flexibility of the soft connection to render the installation of contact groups more flexible and convenient, and utilizes the hard connection to obtain reliable and stable conductive paths, thus achieving a balance between installation efficiency and installation quality.une boucle electriquement conductrice d'un disjoncteur, comprenant: un groupe de contacts d'entree (121, 122), un groupe de contacts de sortie (131, 132) et un assemblage conducteur (115, 111, 112). le groupe de contacts d'entree (121, 122) est connecte a une borne d'entree (123), tandis que le groupe de contacts de sortie (131, 132) est connecte a une borne de sortie (133). l'assemblage conducteur (115, 111, 112) comprend un assemblage a connexion souple (115) et un assemblage a connexion dure (111, 112) l'assemblage a connexion dure (111, 112) est fixe sur une base du disjoncteur l'assemblage a connexion souple (115) est connecte au groupe de contacts d'entree (121, 122) et au groupe de contact de sortie (131, 132) l'assemblage a connexion souple (115) et l'assemblage a connexion dure (111, 112) sont connectes pour former une boucle electriquement conductrice entre le groupe de contacts d'entree (121, 122) et le groupe de contacts de sortie (131, 132). le groupe de contacts d'entree (121, 122) et le groupe de contacts de sortie (131, 132) sont montes coaxialement. en combinant une connexion souple et une connexion dure, la boucle electriquement conductrice utilise la flexibilite de la connexion souple pour rendre l'installation des groupes de contacts plus flexible et commode, et utilise la connexion dure pour obtenir des trajets conducteurs fiables et stables, ce qui permet d'obtenir un equilibre entre l'efficacite d'installation et la qualite d'installation. (Results 3)

Search 3 AND PD<20160706 (Results 0)
4:

Search TA=(CIRCUIT BREAKER) and PD<=20160706 (Results 69804)
5:

Search 5 and (mov* w3 contact*) and ((static or fixed) w3 contact) and flexib* (Results 1593)
6:

Search 6 and shaft (Results 537)
7:

Search 7 and (contact* w5 shaft) (Results 205)
8:

Search 8 and ((static or fixed) w5 base) (Results 28)
9:

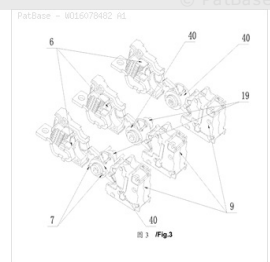
1) Family number: 59419003 (WO16078482 A1)

MULTI-POLE DOUBLE-BREAKPOINT PLASTIC-SHELL **CIRCUIT BREAKER**

Abstract: Source: WO16078482 A1 A multi-pole double-breakpoint plastic-shell **circuit breaker**. Multiple single-pole circuit breaking unit (30) are disposed inside an insulation shell,. A contact system and a matching arc-extinguishing system are disposed inside a unit plastic-shell of each single-pole circuit breaking unit (30). A contact system of each pole comprises two fixed contacts (14, 16) arranged opposite and one bridge-shaped **movable contact** (20), and each bridge-shaped **movable contact** (20) is installed on one contact support (17, 18). Each arc-extinguishing system comprises two symmetrically disposed arc-extinguishing chambers (6, 9). Outer rings of multiple roller bearings (19) are fixedly installed on a separating wall (g) by using a bearing mechanism. An inner ring of a roller bearing (19) is directly linked to contact supports (17, 18) in a manner of interference fit. Two adjacent contact supports (17, 18) are directly inserted and linked in a manner of interference fit. One cylindrical cavity (b) for receiving the contact supports (17, 18) is disposed between two arc-extinguishing chambers (6, 9) of the unit plastic-shell of each single-pole circuit breaking unit (30). By means of the multi-pole double-breakpoint plastic-shell **circuit breaker**, not only high sensitivity and high precision of rotation supported by each contact are ensured, but also precision and synchronization requirements can be ensured through processing relying on precision of only a mold.

Probable Assignee: ZHEJIANG CHINA ELEC APPLIANCE

Earliest Publication Date: 20150603



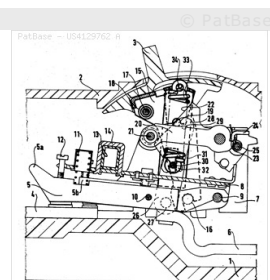
2) Family number: 3564345 (US4129762 A)

CIRCUIT-BREAKER OPERATING MECHANISM

Abstract: Source: US4129762 A The mechanism enables normal separation of the contacts when the handle is moved, even if the contacts are lightly welded together. This prevents the handle from moving if they are solidly welded together. A toggle joint is included between the drive member for the **moving contacts** and the automatic trip mechanism. The **shaft** of the toggle is engaged in an opening in an articulated arm.

Probable Assignee: UNELEC

Earliest Publication Date: 19780224



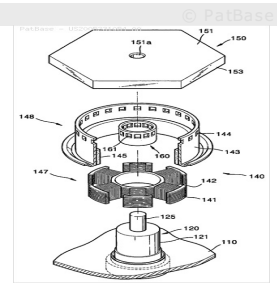
3) Family number: 41886123 (US2005231054 AA)

POLYGON MIRROR APPARATUS

Abstract: Source: US2005231054 AA A polygon mirror apparatus preventing a polygon mirror from separating from a rotor, having a rotor housing integrally formed with a polygon mirror is provided. The polygon mirror apparatus includes a base, a bearing coupled with the base, and a rotating **shaft** installed at the bearing to be rotatable. A polygon mirror is coupled with the rotating **shaft** to deflect and scan incident light. A driving source rotates a polygon mirror using electromagnetic power. A stator is positioned at the bearing, and a rotor installed around the stator so as to be rotatable, and is partially inserted into the polygon mirror by insert molding.

Probable Assignee: S PRINTING SOLUTION CO LTD

Earliest Publication Date: 20051020



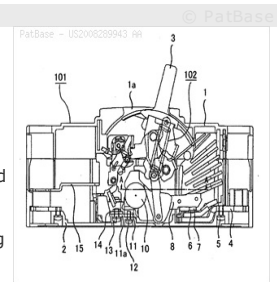
4) Family number: 33587129 (US2008289943 AA)

CIRCUIT BREAKER

Abstract: Source: US2008289943 AA A **movable contacting** device in a **circuit breaker** comprises: a crossbar linked with the opening/closing mechanism and carried so as to pivot cooperatively with the opening/closing mechanism; a **movable contact** arm engaged, so as to cooperational with the crossbar, with a **shaft** fitted into a mutually opposing recesses in the crossbar; and a **movable contact** arm support **fixed** to the case accomodating the opening/closing mechanism and having mutually opposing through-holes through which the **shaft** is passed; and the **movable contact** being configured so that the **movable contact** slides between surfaces of **movable contact** arm support having the mutually opposing through-holes; and the construction of a single-pole portion of the **movable contact** arm is constituted by arranging in parallel two **movable contact** arm members each having a **movable contact** at one end, and in a **shaft**-supporting portion at the other end, an elastic member is sandwiched between the two **movable contact** arm members. With this arrangement, circuit breakers provided with a **movable contacting** device that is small in size and stable in contact resistance can be made available.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 20061102



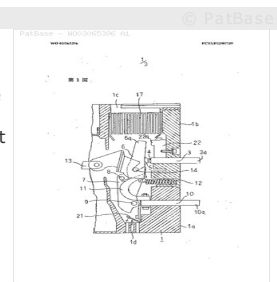
5) Family number: 1584750 (WO03065396 A1)

AIR CIRCUIT BREAKER

Abstract: Source: WO03065396 A1 An air **circuit breaker** capable of suppressing the temperature rise of a make and break contactor and energized bodies around the contact by a heat generation due to the energization of the contact, comprising, in a cabinet 1, a fixed conductor 3 having a **fixed contact 4 fixed** thereto, a movable element 6 having a **movable contact 5 moving** close to and apart from the **fixed contact 4 fixed** thereto, and an arc-extinguishing device 17 inductively extinguishing an arc generated between both contacts, a discharge window 1c for discharging arc gas to the outside of the cabinet, vent holes 1d opened at a position opposed to the discharge window 1c and forming an air passage inside the cabinet, a valve member 21 closing the vent holes 1d when a pressure inside the cabinet rises, an arc block 22 having a fixed side arc contactor 22a extended from the **fixed contact 4** to allow an electricity and a heat to be transferred thereto, and the **movable side arc contactor 6** extended from the **movable contact 5** to allow an electricity and a heat to be transferred thereto.

Probable Assignee: MITSUBISHI DENKI KK

Earliest Publication Date: 20030701



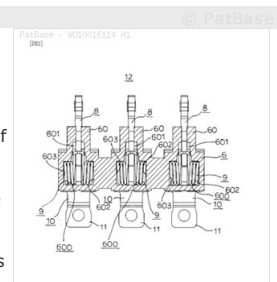
6) Family number: 44338999 (WO10016114 A1)

MOVABLE CONTACTOR DEVICE OF CIRCUIT BREAKER

Abstract: Source: WO10016114 A1 A **movable contactor** device of a **circuit breaker** easy to assemble and having a reduced number of components. The **movable contactor** device of the **circuit breaker** has **movable contactors** which are partially disposed between a pair of connecting conductor parts and respectively have both of the lateral surfaces respectively slidably contacting with the inner lateral surfaces of the connecting conductors, a pair of coil spring parts which are fitted between the outer lateral surfaces of the respective connecting conductor parts and the lateral walls of the recess parts of a cross bar to bias the connecting conductor parts to the side of the **movable contactors**, an arm-shaped spring part to which the respective one ends of the coil spring parts are mutually connected to bias the **movable contactors**, and a pair of leg parts which extends from the other ends of the respective coil spring parts to contact with the wall surfaces of the recess parts of the cross bar. The recess parts of the cross bar has spring holding walls contacting at least a part of the outer periphery parts of the coil spring parts to hold the coil spring parts.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 20100211



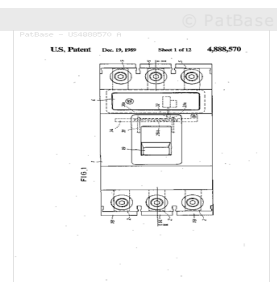
7) Family number: 17811497 (US4888570 A)

CIRCUIT BREAKER

Abstract: Source: US4888570 A In a trip relay mechanism (50) of **circuit breaker** wherein a latch (23A), a latch lever (25A) and a trip bar (34) are urged to engage with each other; the trip bar (34) is disposed between the latch (23A) and the latch lever (25A) in the direction of power source side-load side of the **circuit breaker** and they (23A, 25A, 34) are urged by one double-torsion spring (35), and further the trip bar (34) is separated into a main part (34B) extended over each pole and a latching part (34A) for engaging the latch lever (25A).

Probable Assignee: MITSUBISHI DENKI KK

Earliest Publication Date: 19881124



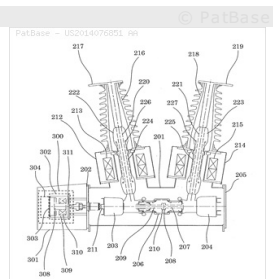
8) Family number: 52731890 (US2014076851 AA)

ELECTROMAGNETIC OPERATING DEVICE

Abstract: Source: US2014076851 AA An electromagnet mechanism is coaxially disposed with a vacuum interrupter that is disposed in a **circuit breaker**, and has a movable core and a fixed core facing each other and an electromagnetic coil that makes the movable core and the fixed core separate or come into contact in response to electromagnetic force. A driving rod which is movably disposed in the axial direction of the electromagnet mechanism is coupled to the movable core, and in which one side is coupled to the **circuit breaker** and the other side passes through an opening side end plate of the electromagnet mechanism to be extended outward from the opening side end plate of the electromagnet mechanism. An indication unit is disposed on the opening side end plate of the electromagnet mechanism, and indicates a state of the **circuit breaker** in conjunction with the movement of the driving rod.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 20130110



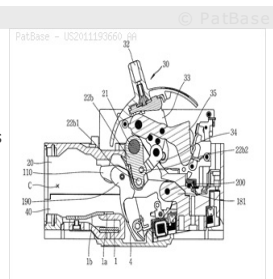
9) Family number: 49316123 (US2011193660 AA)

MOVABLE CONTACTOR ASSEMBLY FOR CURRENT LIMITING TYPE MOLDED CASE CIRCUIT BREAKER

Abstract: Source: US2011193660 AA A **movable contactor** assembly for a current limiting type MCCB comprising: a terminal base fixedly installed on a case; a plurality of **movable contactors** having a cam face portion; a pair of holder plates supporting the **movable contactors** at both sides thereof; a plurality of first springs providing an elastic force to the **movable contactors**; a plurality of extending plate portions provided to face the side of one end portion of each of the **movable contactors**; a plurality of **flexible** wire plates electrically connecting the **movable contactors** and the terminal base and having a portion bendable toward the **movable contactors** or toward the extending plate portions; and a second spring providing an elastic force to the **flexible** wire plates so as to be tightly attached to the **movable contactor**.

Probable Assignee: LS INDUSTRIAL SYSTEMS CO LTD

Earliest Publication Date: 20110720



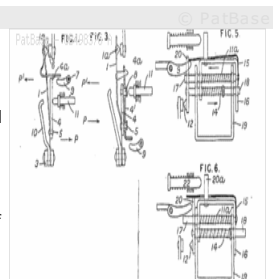
10) Family number: 19624963 (GB498376 A)

IMPROVEMENTS IN, AND CONNECTED WITH, OVERLOAD-RELEASED CONTACT MECHANISM FOR AUTOMATIC ELECTRIC SWITCHES

Abstract: Source: GB498376 A 18532/38 (divided out of 498,325), and 31212/37. [Class 38 (v)] Overload-released contact mechanism for an automatic switch comprises a pair of oppositelyacting springs, one tending to close, the other to open, the **contacts**, the **moving contact** being **movable** together with a trigger by the opening spring while a catch co-operating with the trigger is carried by a part under the influence of the closing spring. Manual means operative on the catch-carrying part is adapted to re-engage the catch and trigger to allow the contacts to close, and an automatic trip is adapted to free the trigger for disengaging the contacts while remaining in the path of the catch or trigger to prevent reclosing of the contacts after operation of the manual means as long as the trip is in the tripping position. The contacts may operate to open the tractive magnet circuit of the automatic switch. In Fig. 1, a single spring 1 is provided with a lower closing part acting in the direction of the arrow P, and with an upper opening part acting in the direction of arrow P <1> and carrying the **movable contact** 1a. The spring 1 is secured to a fixed support 3 and carries at a point 5 a catch plate 4 which co-operates with a trigger 4a on the upper part to hold the contact 1a in engagement with contact 6. A trip lever 9 on a pivot 7 is adapted to break the engagement between 4, 4a to permit the upper part of 1 to open the **contacts** by **moving** against the back stop 10. Pressure applied to a button 11 re-engages the latch 4, 4a and when the pressure is released the lower part of 1 recloses the contacts provided 9 is inoperative. Two springs interconnected at the point 5 may replace the single spring 1, and the spring or springs may be laminated. A trip-button may act on the trigger 4a. In Fig. 3, the trigger 4a engages a slot in the upper end of a plate 4 <1> which is slidable on rivets 5, 8 on plate 4 to release the connection when the trip lever 9 rises. In Figs. 5, 6, the **movable contact** 12 is carried on a catch plate 20 on a rod 18 which is slidable in a fixed bracket 19 and urged in the opening direction (shown by the arrow) by a spring 14 bearing at one end against a carrier 16. Rod 18 slides freely through the carrier, which carries a rod 17 slidable in bracket 19 and plate 20, and carries the closing spring 11a. When the trip lever 9 is rotated, it lifts the end of trigger 15 clear of plate 20 and, since 15 is attached to the carrier 16, the parts assume the Fig. 6 position. When the button 22 is pressed into engagement with pin 20a on carrier 16, the parts 15, 20 re-engage, and when the button 22 is released, the spring 11a moves the carrier to closed position. The switches shown may open, when tripped, the circuit of the holding coil of a **circuit-breaker**. One Provisional Specification refers to electromagnetic releases, and the other to Specification 498,325.

Probable Assignee: SCHIELE INDUSTRIEWERKE

Earliest Publication Date: 19390106



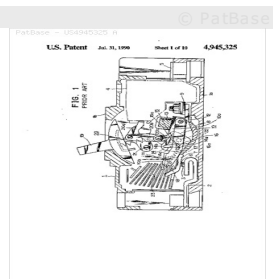
11) Family number: 29490114 (US4945325 A)

CIRCUIT BREAKER WITH SMOOTH SLIDING OPERATION

Abstract: Source: US4945325 A A **circuit breaker** wherein at least a pin sliding surface of a guide hole of a first contact arm, at least a pin sliding surface of a long hole of a second contact arm, and at least a contact surface of a second pin in contact with both the pin sliding surfaces, are treated by low-friction treatment to reduce frictional resistance, and surface-treated to provide surfaces exempt from attachment of molten metal caused by arcing; and furthermore at least the pin sliding surface of the first contact arm and at least the pin sliding surface of the long hole of the second contact arm are hardened to provide both the pin sliding surfaces with greater hardness than the second pin, thereby ensuring smooth movement of the second pin.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 19890524



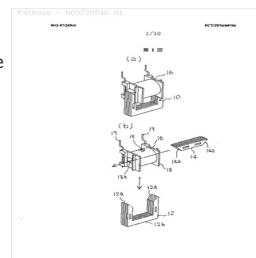
12) Family number: 18036280 (WO9728546 A1)

CIRCUIT BREAKER

Abstract: Source: WO9728546 A1 A **circuit breaker** having a current transformer (CT) suitable for automatic fitting. The object of the invention is to provide a **circuit breaker** capable of improving productivity by making it easy to combine the CT with conductors. To accomplish this object, the **circuit breaker** comprises a U-shaped core at the bottom of a case, an I-shaped core on the U-shaped core, and a coil wound on the I-shaped core, wherein the coil is formed integrally with a printed board of a signal processor and all these components are stacked in the case. The **circuit breaker** is suitable for automation of product assembly.

Probable Assignee: HITACHI LTD

Earliest Publication Date: 19970806



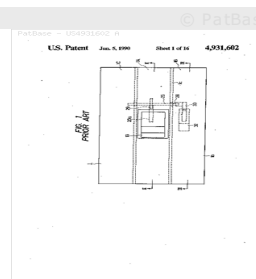
13) Family number: 17119944 (US4931602 A)

MULTIPOLE **CIRCUIT BREAKER**

Abstract: Source: US4931602 A A multipole **circuit breaker** of a type with a mechanism pole having a switching mechanism in which adjacent poles are disposed in opposition to the mechanism pole with an interphase wall therebetween and each having an internal attachment such as an alarm switch or the like but no switching mechanism. A latch engages a cradle of the switching mechanism and is arranged to be actuated by an automatic tripping device. A supporting **shaft** rotatably supports the latch, an a lever fixed on the supporting **shaft** engages the cradle. Actuators are fixed on the supporting **shaft** so as to engage the internal attachment of the respect adjacent poles. The supporting **shaft** is made of metal. Insulating caps are inserted and fixed onto end portions of the supporting **shaft**, the supporting **shaft** passing at portions of the insulating caps through the interphase walls. The actuators are inserted and fixed onto the insulating caps.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 19881130



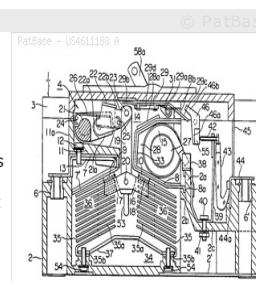
14) Family number: 1938725 (US4611188 A)

CIRCUIT BREAKER

Abstract: Source: US4611188 A It is the main object of this invention to provide a **circuit breaker** in which the **movable contacts** have sufficient opening force and opening distance, and in which the breaking time is short. In order to attain the object, the **circuit breaker** of this invention is provided with a dead center link mechanism comprising a **movable contact** link which is rotatably supported by the arms of a cross bar which is operated so as to be capable of opening-closing the circuit and tripping by means of a trip-free mechanism, and a toggle spring which is bridged between the cross bar and the **movable contact** link. When a large current such as a short-circuit current flows, a movable steel plate attracted by an electromagnet for instantaneously tripping hits a rod for supporting the **movable contacts** which is connected to the **movable contact** link, whereby the dead center link mechanism makes the **movable contacts** open at high speed from the fixed contacts. As a result of such an operation, the current-limiting effect in this **circuit breaker** is excellent and breaking performance is improved.

Probable Assignee: TERASAKI DENKI SANGYO KK

Earliest Publication Date: 19850913



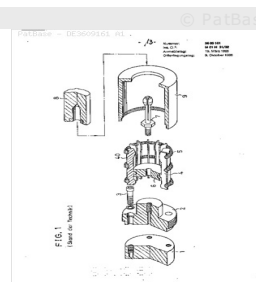
15) Family number: 3873160 (DE3609161 A1)

INTERRUPTER SWITCH

Abstract: Source: DE3609161 A1 An interrupter switch is described which has a stationary contact part (4), an arc contact (7) and a **movable contact** part (8). The arc contact (7) is in this case supported such that it can move in an articulated manner in a direction at right angles to the movement direction of the **movable contact** part (8), as a result of which eccentricity between the stationary contact part (4) and the arc contact (7) is avoided.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 19861009



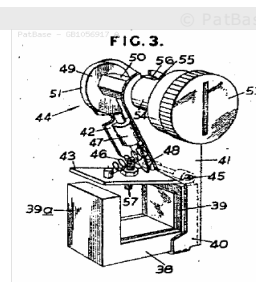
16) Family number: 22970964 (GB1056917 A)

ELECTRIC CIRCUIT BREAKERS

Abstract: Source: GB1056917 A 1,056,917. Automatic circuit breakers. DORMAN and SMITH Ltd. Oct. 19, 1965 [Nov. 27, 1964], No. 48444/64. Heading H2B. The electromagnetic tripping device of an automatic **circuit-breaker** is provided with a current setting device for adjusting the separation of an armature 43 and core 38 and comprising a cam 49 rotatable by a knob 53 and a limiting device 55, 56 which allows only a part of the cam surface to be used to adjust the armature. The limiting device consists of a peripheral groove 55 in the knob engaged by a fixed tab 56 allowing the knob to be turned through only about 180 degrees. The cam 49 is mounted on a hexagonal **shaft** 50 and knob 53 can be assembled on said **shaft** in any one of twelve different angular positions thus allowing any selected 180 degrees of the total 360 degrees of cam surface to be used. The cam acts on the armature 43 through a push-rod 48 and the armature acts upon a common trip-bar 58 through an adjustable screw 57. In a suggested modification, cam 49 may be a face cam. In a three-phase **circuit breaker** (Figs. 1, 2, not shown), an electromagnetic trip, as well as a bimetal, in each phase, acts upon the common trip bar 31 which normally supports one end of a latch 29 whose other end latches a lever 24 supporting the usual snap acting toggle linkage actuating mechanism. Further adjustment can be made by exchanging an armature biasing spring 46 for one of greater or lesser tension.

Probable Assignee: DORMAN AND SMITH LTD

Earliest Publication Date: 19670201



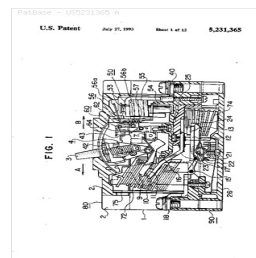
17) Family number: 3417564 (US5231365 A)

CIRCUIT BREAKER

Abstract: Source: US5231365 A The present invention aims to provide a current-limiting **circuit breaker** which is improved in assembling efficiency and which can readily cope with diversification of specifications. The **circuit breaker** of the invention comprises power source side contact unit including a group of component parts containing a power source side **contact** and **movable contact** unit including a group of component parts containing a load side contact. The units are detachably connected to each other. The movable unit is selectively connected to the various power source side contact units. Therefore, according to the invention, circuit breakers of various kinds of types can be obtained which are more useful, and manufactured by a small number of component parts some of which are commonly used in products. The circuit breakers can readily cope with the diversification of the specifications, and are improved in assembling efficiency.

Probable Assignee: HITACHI LTD

Earliest Publication Date: 19920617



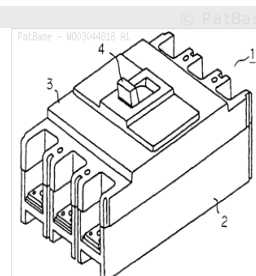
18) Family number: 1557573 (WO03044818 A1)

CIRCUIT BREAKER

Abstract: Source: WO03044818 A1 A **circuit breaker** having excellent heat resistance, arc resistance and over travel characteristics between contact points and suitable to recycle or reuse. The **circuit breaker** comprises mechanisms 7, 28, 29, 31, 32 for opening/closing holders 6, 26 holding **movable contacts** 5, 25 rotatably, and bases 2, 21 for holding the holders 6, 26 rotatably and also holding fixed side contacts 10, 23. When an overcurrent is detected, the **movable contacts** 5, 25 are rotated and an arc generated between contacts points is extinguished by arc-extinguishers 9, 34. The bases 2, 21 are insulating moldings principally comprising crystalline thermoplastic resin irradiated with an electron beam after molding.

Probable Assignee: MITSUBISHI DENKI KK

Earliest Publication Date: 20030401



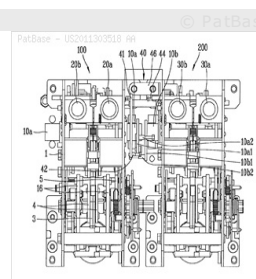
19) Family number: 50099570 (US2011303518 AA)

INTERLOCK APPARATUS FOR SOLID INSULATED SWITCHGEAR

Abstract: Source: US2011303518 AA For a solid-insulated switchgear in which a main circuit switching mechanism and a ground circuit switching mechanism are provided laterally, and there is disclosed an interlock apparatus for the solid-insulated switchgear comprising a first interlock mechanism connected to a switching **shaft** of the ground circuit switching mechanism to press the on **shaft** of the main circuit switching mechanism to be at the locking position or release the on **shaft** of the main circuit switching mechanism; and a second interlock mechanism connected to the switching **shaft** of the main circuit switching mechanism in an interlocking manner to press the on **shaft** of the ground circuit switching mechanism to be at the locking position or release the on **shaft** of the ground circuit switching mechanism.

Probable Assignee: THOMSON LICENSING

Earliest Publication Date: 20111215



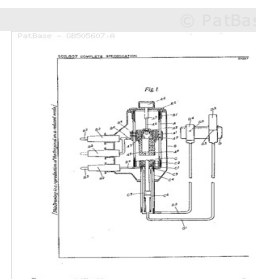
20) Family number: 21692790 (GB505607 A)

IMPROVEMENTS IN OR RELATING TO METAL-CLAD ELECTRIC SWITCHGEAR

Abstract: Source: GB505607 A 1. Metal-clad. electric switchgear, comprising a single-break **circuit-breaker** unit having fixed and **moving contacts** and an 75 associated arc-control device immersed in insulating liquid within a container, which is itself enclosed within an outer metal casing bodily removable from a fixed portion of the switchgear, cooperating contacts. respectively carried by the casing and the fixed portion being provided in the connection from each circuitbreaker contact to the external circuit.

Probable Assignee: REYROLLE A AND CO LTD

Earliest Publication Date: 19390515



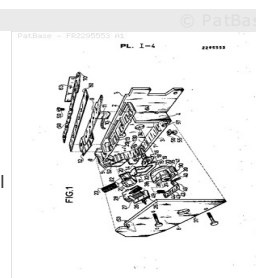
21) Family number: 3483161 (FR2295553 A1)

CIRCUIT BREAKER FOR CONSUMER - USES SINGLE UNIT IN MULTIPLE FORMAT WITH ARC EXTINCTION AND OPTIONAL TRIPS

Abstract: Source: FR2295553 A1 The **circuit breaker** consists of one single-phase unit (72) which may be linked to others to form a multi-phase unit. Each unit has a **fixed contact** (14) and a mobile contact (44) operated by a spring loaded **shaft** (30) with a square section (31) drive. Arc extinction is provided and gas escapes via a trap (52, 53) in the housing. Metal blades (9, 58) form a current shunt, which is adjustable by a screw (59), to drive a thermal and overload trip (89). Individual units are linked by a mechanical strip (77) to obtain coincident tripping. The breaker may be used without the overload trip and allows easy assembly of multiple units.

Probable Assignee: SAPAREL

Earliest Publication Date: 19760716



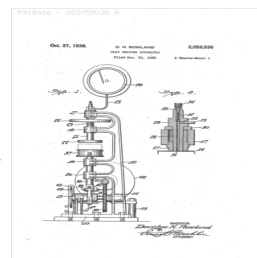
22) Family number: 21397473 (US2059036 A)

CLAY TESTING APPARATUS

Abstract: Source: US2059036 A 1. A machine for testing the plasticity of a sample of material, comprising axially arranged slidably mounted relatively movable members carrying heads adapted to have the sample interposed between them for compression thereby, a compressible wafer containing fluid under pressure and arranged for compression by longitudinal movement of one of said members, a pressure gauge connected with said wafer, there being a check valved passage communicating with said wafer enabling fluid under selected pressure to be introduced within the wafer, a **shaft** arranged at right angles to the axis of said members and having a crank, a pitman revolvably engaged within the crank and pivotally connected with the other of said members, an electric motor for rotating said **shaft**, a **circuit breaker** interposed in the motor circuit, and means operated by rotation of said **shaft** for breaking the circuit when the **shaft** has made one complete revolution.

Probable Assignee: LOCKE INSULATOR CORP

Earliest Publication Date: 19361027



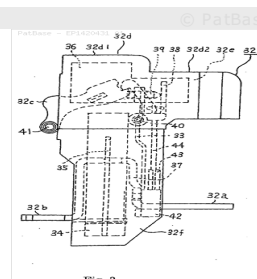
23) Family number: 30571850 (EP1420431 A1)

CIRCUIT BREAKER

Abstract: Source: EP1420431 A1 A **circuit breaker** in which a breaker case (1) is composed of a base (1a) and a cover (1b) and that is formed by accommodating one of unitized automatic tripping devices in a unit housing portion (28) of the base (1a). An electronic automatic tripping unit (32C), a thermal electromagnetic automatic tripping unit (32B), and an earth-leakage detection type automatic tripping unit (32A) have outer structures of the same shape from which a trip portion (32c), terminal conductors (32a), and **movable -contact** -side conductors (32b) are exposed. An overcurrent tripping element (33), a leakage detection ZCT (34), an amplification circuit (35) for amplifying an output of the leakage detection ZCT (34), and an earth-leakage tripping electromagnet portion (36) that operates on the basis of an output of the amplification circuit (35) are accommodated in the outer structure of the earth-leakage detection type automatic tripping unit (32A).

Probable Assignee: MITSUBISHI DENKI KABUSHIKI KAISHA

Earliest Publication Date: 20040519

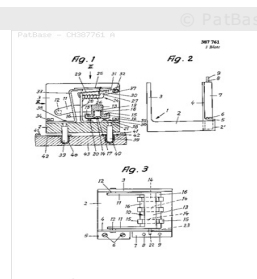


24) Family number: 22165171 (CH387761 A)

MULTIPOLE CIRCUIT BREAKERS, IN PARTICULAR MOTOR CIRCUIT BREAKER (MACHINE TRANSLATION)

Abstract: Source: CH387761 A [Source: claim 1] 1 **circuit breaker** according to claim that characterized that the **movable contact** bridges (14) switch contacts are, without additional fasteners on the lateral part (13) attached to and supported by supplying the contact pressure springs (18) on same are.

Probable Assignee: WEBER AG FAB ELEKTRO



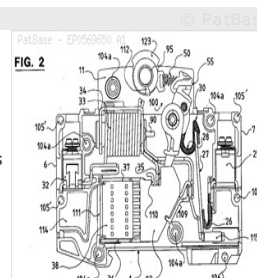
25) Family number: 9412661 (EP0569650 A1)

PHASE/NEUTRAL CONDUCTOR CIRCUIT BREAKER

Abstract: Source: EP0569650 A1 Phase/neutral conductor **circuit breaker**, including a modular box of standardised width whose base (1) is devised so as to be fixed in a rail of standard size, and designed such that, with the aim of according the cutoff chambers the largest possible volume, bearing in mind the standardised dimensions of the modular box, and simultaneously to lighten and to reduce the size of the lock mechanism, there is provision for the magnetic means (33, 34) to be situated in the immediate proximity of the operating member (5) and in contact with the spacer, so that on the one hand the distance separating the two parallel planes containing respectively the longitudinal axis of the magnetic means (90) and that of the pivot of the mobile rig is the shortest compatible with the minimum tripping couple for the said mechanism and, on the other hand, the whole of the central part of the volume delimited by the spacer and the shell opposite it, virtually to the top of the said magnetic means, is occupied at each stage by the respective cutoff chamber.

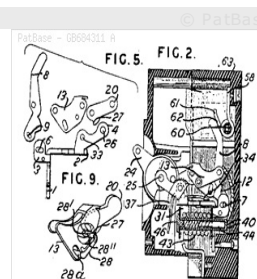
Probable Assignee: HAGER GROUP

Earliest Publication Date: 19931118



26) Family number: 19659570 (GB684311 A)

IMPROVED TRIP-FREE ELECTRIC CIRCUIT BREAKER



Abstract: Source: GB684311 A 684,311. Automatic circuit-breakers. HEINEMANN ELECTRIC CO. Aug. 8, 1947 [April 6, 1939], No. 21963/47. Class 38 (v) In a trip-free **circuit-breaker** having a rigid **moving contact** bar, a wiping action at the contacts is obtained by providing the bar with an inclined slot for its pivot pin. The **circuit-breaker** comprises an L-shaped frame 1 having integral ears 3, 4, the ears 3 having slots 6 to receive the pivot pin 7 which passes through an inclined slot 9 in the switch bar or arm 8, whilst the ears 4 have bearing apertures 26 to receive the pivot pin 25 of the switch handle 24 and apertures 33 for the pivot pin of an armature. The switch arm is biased towards the open position by a spring 12 and is moved by the handle 24 through the medium of toggle links 13, 30, the links being normally latched in their extended position by means of a projection 27 abutting the arm 28¹ of a U-shaped member 28, Fig. 9. This arm 28¹ has a flat surface 28¹¹ which permits the passage of the projection 27 when the member 28 is turned about its arm 28¹ to trip the switch. The frame 1 supports an insulating tube 40 on which the trip coil 43 is wound. At the end of the tube is a fixed pole piece 46 and within the tube is a closely fitting spring loaded core 44. The armature 31 is spring biased and has a limb which co-operates with the pole piece 46 and the pole 2 formed by the end of the frame 1, and a limb 34 which may engage the limb 28a of the member 28. The **circuit breaker** is closed manually and may be opened manually by means of the handle 24 which moves the switch arm about the pivot 7 by means of the latched toggle links 13, 20, the slots 6, 9 which are inclined at different angles, causing the contact surface 62 of the arm 8 to slide on the **fixed contact** 61 when the switch is closed. When the switch is opened a similar sliding movement is obtained, and if the contacts have welded, the impact of the pin 7 against the ends of the slots 6 creates the shock necessary to break the weld. Under heavy overloads the magnetic field set up by the coil 43 attracts the armature 31 to trip the **circuit breaker** by breaking the toggle as the limb 34 turns the member 28. During more moderate overloads the flux of the coil 43 is not sufficient to trip the **circuit breaker** until the core 44 has been drawn into the coil to improve the permeability of the magnetic circuit. As the core 44 closely fits the tube 40 the air or oil in the tube will retard the movement of the core and impose a time delay which will vary inversely with the strength of the current. The **fixed contact** 61 consists of a conducting strip 58 wound around an insulated core 60 between magnetic blow-out plates 63. A stop 37 limits the outward movement of the armature. Specification 684,327 is referred to. The Specification as open to inspection under Sect. 91, also included the subject-matter of Specification 684,390. This subject-matter does not appear in the Specification as accepted.

Probable Assignee: HEINEMANN ELECTRIC CO

Earliest Publication Date: 19441024

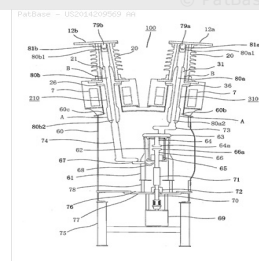
27) Family number: 53426185 (US2014209569 AA)

TANK TYPE VACUUM **CIRCUIT BREAKER**

Abstract: Source: US2014209569 AA A pressure tank which seals and contains an electrical device, is formed with an opening portion corresponding to a terminal portion provided on the electrical device. A porcelain tube which is disposed so as to protrude with respect to the pressure tank, is fixed to the opening portion at a base portion thereof, and is provided with a terminal conductor at a leading end portion thereof. A first connection conductor is led out into a center portion of the porcelain tube at one end thereof, and is connected to the terminal conductor at the other end thereof. A second connection conductor which has a concave section to be fitted onto the first connection conductor at one side thereof, is connected to the terminal portion at the other side thereof. A contact is disposed between the first connection conductor and the concave section of the second connection conductor.

Probable Assignee: MITSUBISHI ELECTRIC CORP

Earliest Publication Date: 20130404



28) Family number: 21630494 (US2506546 A)

CIRCUIT BREAKER

Abstract: Source: US2506546 A (Claim 1) 1. A reclosing **circuit breaker** comprising a **shaft**, energy storing means associated with said **shaft** for rotating the latter, a switch arm connected to said **shaft** for opening and closing the breaker, a controlling member carried by said **shaft** for rotation therewith, a reclosing timing mechanism having means adapted to be engaged by said controlling member for governing the speed of rotation of said shaft to provide a predetermined time delay between opening and closing leasable latch arm normally urged into engagement with said controlling member to prevent rotation of said **shaft** by said energy storing means, electromagnet means having a trip arm adapted upon, a condition to permit disengagement of said latch arm from said controlling member to free said **shaft** for rotation under control of said reclosing timing mechanism to open and close said breaker, and a lock-out timer mechanism between said controlling member and said reclosing timing mechanism having means adapted to be actuated by said controlling member to an operative position to engage said member of said reclosing timing mechanism to lock-out the reclosing timing mechanism and rotation of said **shaft** with said breaker in open position after a predetermined number of successive opening and closing operations of said breaker upon continuation of, a substantially sustained abnormal condition on the line.

Probable Assignee: ELECTRICAL ENG EQUIPMENT CO

Earliest Publication Date: 19500502

