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(54) **AN ELECTRICAL SAFETY CONTACT WITH REMOVABLE CONTACT BRIDGE**

ELEKTRISCHER SICHERHEITSKONTAKT MIT ABNEHMBARER KONTAKTBRÜCKE

CONTACT DE SÉCURITÉ ÉLECTRIQUE AVEC PONT DE CONTACT AMOVIBLE

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Description

[0001] The present invention relates to an electrical safety contact with a removable contact bridge as defined in the preamble of claim 1 as used, for example, in an elevator installation structure.

[0002] In elevator installations safety contacts with a removable bridge are widely used to enable/disable certain features, e.g. to deny electric consent to start the elevator until all landing doors and cabin doors are properly closed.

[0003] The requirements to be met by safety contacts are generally set forth by stringent standards. For instance, the terminals of the removable contact bridge must fit into the receiving part of the contact, to only electrically close the electric circuit when the mechanical closing members have been engaged for a minimum working stroke, generally at least 7 mm.

[0004] Italian patent application ITMI20110042 discloses a safety electric contact with removable contact bridge according to the pre-characterizing portion of claim 1.

[0005] Concerning the terminals of the removable contact bridge, it should be noted that their size will generally meet strict dimension requirements that have currently become a standard, namely in terms of sizes.

[0006] The body of the electrical contact has special openings, against which contact elements are located, such terminals of the removable body being intended to fit into the electrical contact through such openings to establish electrical communication between the contact elements.

[0007] It should be noted that, to prevent a user of an elevator installation from willingly or unwillingly introducing a finger into the body of the electrical contact, and from reaching a contact element, such openings should not be too large. Nevertheless, said openings identify passages through which liquids or dirt can enter the body of the electrical contact.

[0008] Generally, while the infiltration of liquids or dirt is an undesired aspect, it does not entail major problems and does not affect proper operation of the electrical safety contact, unless the liquid or dirt builds up over time inside the body of the electrical safety contact.

[0009] Furthermore, a greater incidence of operating defects has been found in electrical safety contacts, which are positioned to have such electrical terminal receiving openings facing upwards. This occurs because the material that infiltrates the body of electrical safety contacts tends to build up and settle on the portions that define the contact elements proper of the electrical safety contacts, and the same applies to any liquids inside the body of the electrical safety contacts.

[0010] In view of these problems, the need is apparently felt for an electrical safety contact that can avoid build-up of liquids and/or dirt in the body of the electrical safety contact.

[0011] Therefore, this invention is based on the technical

problem of designing and providing an electrical safety contact with a removable contact bridge, that has such structural and functional characteristics as to fulfill the above needs, while obviating the teachings as mentioned above with reference to prior art electrical safety contacts.

[0012] This problem is solved by an electrical safety contact with a removable contact bridge as defined by the features of claim 1.

[0013] Further features and advantages of the electrical safety contact with a removable contact bridge of the invention will be apparent upon reading of the following description of a few preferred exemplary embodiments thereof, which is given by way of illustration and without limitation with reference to the accompanying figures, in which:

- Figure 1 is a plan view of an electrical safety contact of the invention with a contact bridge inserted therein and with certain internal parts outlined by dashed lines;
- Figure 2 shows a plan view of the electric contact of Figure 1 with the contact bridge pulled out and with the cover of the body of the electric contact removed;
- Figure 3 shows a perspective view from the rear side of the electric contact of Figure 1 and of the corresponding removable contact bridge in the pulled-out configuration and
- Figure 4 shows a perspective view of the body of the electrical safety contact of Figure 1 with the cover removed, to expose its internal structure.

[0014] Referring to the accompanying figures, numeral 1 generally designates an electrical safety contact with a removable bridge 2 according to the invention.

[0015] The removable contact bridge 2 comprises rod-like contacts 3 which are in electrical communication with each other and project parallel to each other from the same side of a head 2a of the removable bridge 2.

[0016] The electrical safety contact 1 comprises a receiving hollow body 4 intended to be secured to an external support by means of fastening means.

[0017] The receiving body 4 identifies an internal cavity 14 and has the shape of a parallelepiped defined by:

- a rear bottom wall 9,
- side walls projecting out of said bottom wall and
- a front wall 12 secured to the side walls and acting as a closing cover of the receiving hollow body 4.

[0018] According to the illustrated embodiment, the receiving body 4 is a body having the shape of a rectangular or square parallelepiped.

[0019] Contact elements 6 supported by respective contact leaf springs 7 are received inside the receiving body 4 in protected positions.

[0020] The receiving body 4 comprises a first side wall 10 with two passing-through openings 5, extending along

a predetermined axis Z-Z, formed therein.

[0021] These passing-through openings 5 are located substantially at the contact elements 6 and allow insertion/disconnection of the rod-like contacts 3 of the contact bridge 2 into/from the receiving body 4 along a predetermined insertion path (see broken line S of Figure 2).

[0022] In the illustrated embodiment, when the electrical terminals of the contact bridge 2 are inserted into the receiving hollow body 4 to the bottom through the passing-through openings 5 (see Figure 1), such rod-like contacts 3 extend substantially parallel to the aforementioned axis Z-Z of the passing-through openings 5.

[0023] Referring to the contact elements 6, it should be noted that these contact elements are supported in a well-known manner in the receiving body 4 so that, upon insertion of the aforementioned rod-like contacts 3 of the contact bridge 2 through the passing-through openings 5, these contact elements 6 are reversibly retracted into the receiving body 4, against the elastic return action exerted by the respective contact springs 7 which support them, to move from a forward position (see Figures 2 and 4), in which said contact elements 6 are substantially at their respective through openings 5, to a more retracted position inside the receiving body 6 (see Figure 1).

[0024] Preferably, each of the two aforementioned contact springs 7 is a thin leaf spring having a reduced thickness, approximately ranging from 0.10 to 0.20 mm, having a width approximately ranging from 5 to 10 mm, preferably of 7 mm.

[0025] The receiving body 4 is a closed body and preferably comprises, in addition to the aforementioned passing-through openings 5 for insertion and disconnection of the rod-like contacts 3 of the contact bridge 2 into/from the receiving body 4, two additional passing-through openings 8 to allow electric conductors to be introduced into the receiving body 4 to their respective wiring terminals 11.

[0026] Each wiring terminal is connected in electrical continuity with a respective contact element 6.

[0027] Preferably, the aforementioned springs 7 are made of an electrically conductive material, so that electrical continuity between each contact element 6 and its respective wiring terminal 11 will be provided by the contact leaf spring 7.

[0028] Advantageously, the aforementioned receiving body 4 comprises at least one drain opening 13 to allow liquids and/or dirt to pass and exit from the cavity 14 of said receiving body 4, whereby a drain channel extending from the aforementioned first passing-through openings 5 to the aforementioned at least one drain opening 13 is identified in said receiving body.

[0029] Preferably, the aforementioned at least one drain opening 13 is positioned at a wall 15 that identifies one side of the receiving body 4 opposite to the side identified by the aforementioned first wall 10 having first passing-through openings (5).

[0030] Preferably, the aforementioned at least one drain opening 13 is positioned at a wall 15 of said receiv-

ing body 4 that identifies a side of said receiving body 4 parallel to the side identified by said one first wall 10 having first passing-through openings 5.

[0031] According to the present invention, the aforementioned at least one drain opening 13 identifies a passage which, when said electrical safety contact is in use, has a minimum free cross-section of at least 4 mm², more preferably a minimum free cross-section of at least 6 mm², to ensure drainage of any liquids and escape of any dirt.

[0032] Preferably, the aforementioned first passing-through openings 5 and the aforementioned at least one drain opening 13 are formed at with distinct side walls 10, 15 of said receiving hollow body 4.

[0033] It should be noted that said at least one drain opening 13 identifies a passage:

- extending to an axial section inside said receiving body 4 and
- delimited by internal side walls 18 over the entire length of said passage extending inside said receiving body 4.

[0034] According to the preferred embodiment as shown in the figures, said at least one drain opening 13 comprises two distinct drain openings 13.

[0035] Preferably, the receiving body 4 comprises a dividing partition 16 to divide the internal cavity 14 into two separate chambers, a respective spring 7 and a respective contact element 6 being accommodated inside each of said chambers. In this configuration, each of said two separate chambers is formed with at least one respective drain opening 13.

[0036] It will be appreciated from the foregoing, the electrical safety contact with a removable contact bridge of the present invention fulfills the above mentioned need and also obviates the prior art drawbacks as set out in the introduction of this disclosure.

[0037] Thus, the characteristic of providing said at least one drain opening can ensure the escape of any liquids or dirt in the internal compartment of the receiving body from the electrical safety contact through the first passing-through openings formed to allow insertion of the rod-like contacts 3 of the contact bridge.

[0038] Advantageously, this is particularly useful when the electrical safety contact is positioned, for example, in the elevator structure, so that the aforementioned first passing-through openings, provided to allow insertion of the rod-like contacts of the contact bridge, will face upwards. Here, any dirt or liquids will apparently tend to enter by gravity the internal compartment of the receiving body and, still by gravity, will travel along the aforementioned drain channel which extends from such first passing-through openings to the aforementioned at least one drain opening, thereby exiting the internal cavity of the receiving body.

[0039] In this regard, it should be noted that the openings formed for insertion of the electric conductors would

not be useful for this purpose since, in operation, the presence of the electric wiring terminals and the electric conductors wired to these terminals would reduce the passage section thereby preventing or hindering the escape of dirt or liquids.

[0040] Further, according to a preferred embodiment, the aforementioned drain channel identified in the receiving body between the first passing-through openings and the aforementioned at least one drain opening is distinct and does not extend through said wiring terminals to prevent oxidation phenomena of the conductive parts of said wiring terminals during operation.

[0041] A further advantage of the electrical safety contact with a removable bridge of the present invention is its unique structural simplicity.

[0042] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the above described electrical safety contact with a contact bridge, still within the scope of the invention, as defined in the following claims.

Claims

1. **An electrical safety contact** with removable contact bridge, comprising a receiving body (4) that identifies an internal cavity (14) inside which contact elements (6) are housed in a protected position, supported by respective springs (7) and in electrical continuity with respective wiring terminals (11) for electrical conductors, wherein:

- said receiving body (4) comprises a first wall (10) provided with first passing-through openings (5) of predetermined axis (Z-Z) positioned in correspondence with said contact elements (6) to allow the insertion or disconnection of rod-shaped contacts (3) of a contact bridge (2) in said axial direction (Z-Z) of said first passing-through openings (5),

characterized in that said receiving body (4) comprises at least one drain opening (13) to allow liquids and/or dirt to pass and exit from said internal cavity (14) of said receiving body (4), in said receiving body being identified a drain channel extended from said first passing-through openings (5) to said at least one drain opening (13), wherein said at least one drain opening (13) identifies a passage that, when said electric safety contact is used, has a minimum free cross section of at least 4 mm² to ensure the drainage of any liquids and the escape of any dirt.

2. Electrical safety contact according to claim 1, wherein said at least one drain opening (13) is positioned in correspondence with a wall (15) that identifies one side of said receiving body (4) opposite to the side identified by said one first wall (10) provided with first

passing-through openings (5).

3. Electrical safety contact according to claim 1 or 2, wherein said at least one drain opening (13) is positioned in correspondence with a wall (15) that identifies a side of said receiving body (4) parallel to the side identified by said first wall (10) provided with first passing-through openings (5).

4. Electrical safety contact according to any one of claims 1 to 3, wherein said at least one drain opening (13) identifies a passage that, when said electric safety contact is used, has a minimum free cross section of at least 6 mm² to ensure the drainage of any liquids and the escape of any dirt.

5. Electrical safety contact according to any one of claims 1 to 4, wherein:

- said receiving hollow body (4) comprises a rear bottom wall (9), side walls projecting from said bottom wall and a front wall (12) secured to the side walls with the function of closing cover of the receiving hollow body (4) and

- said first passing-through openings (5) and said at least one drain opening (13) are formed in correspondence with distinct side walls (10,15) of said receiving hollow body (4).

6. Electrical safety contact according to any one of claims 1 to 5, wherein said at least one drain opening (13) identifies a passage that is:

- extended for an axial section inside said receiving body (4) and

- delimited by internal side walls (18) for the entire length of said extended passage p inside said receiving body (4).

7. Electrical safety contact according to any one of claims 1 to 6, wherein said at least one drain opening (13) comprises two distinct drain openings (13).

8. Electrical safety contact according to any one of claims 1 to 7, wherein:

- said receiving body (4) comprises a dividing partition (16) to divide said cavity (14) into two separate chambers, a respective spring (7) and a respective contact element (6) being housed inside each of said chambers and
- each of said two separate chambers is provided with at least one respective drain opening (13).

9. Electric safety contact according to any one of claims 1 to 8, wherein said receiving body (4) comprises second passing-through openings (8) suitable for

allowing the insertion in said receiving body (4) of electrical conductors until reaching said wiring terminals (11).

10. Electrical safety contact according to any one of claims 1 to 9, wherein:

- said springs (7) are made of electrically conductive material and
- the electrical continuity between a contact element (6) and a respective wiring terminal (11) is ensured by a respective of said springs (7).

11. Electrical safety contact in accordance with any one of claims 1 to 10, comprising a removable bridge (3) having rod-shaped contacts (3) in electrical communication with each other and projecting parallel to each other from the same side of a head (2a) of the removable bridge (2), said rod-shaped contacts (3) being removably inserted/insertable in said receiving body (4) through said first openings (5) to establish an electrical continuity between said contact elements (6).

12. Electrical safety contact according to any one of claims 1 to 11, wherein said drain channel identified in said receiving body (4) from said first passing-through openings (5) to said at least one drain opening (13) is distinct and not passing through said wiring terminals (11) to prevent in use oxidation phenomena of the conductive parts of said wiring terminals (11) from occurring.

Patentansprüche

1. **Elektrischer Sicherheitskontakt** mit einer lösba- ren Kontaktbrücke, umfassend einen Aufnahmekör- per (4), der einen inneren Hohlraum (14) identifiziert, in dem Kontaktelemente (6) in einer geschützten Position aufgenommen sind, die von entsprechen- den Federn (7) gestützt werden und in elektrischer Kontinuität mit entsprechenden Verdrahtungsklem- men (11) für elektrische Leiter stehen, wobei:

- der Aufnahmekörper (4) eine erste Wand (10) umfasst, die mit ersten Durchgangsöffnungen (5) mit vorbestimmter Achse (Z-Z) versehen ist, die an den Kontaktelementen (6) positioniert sind, um das Einsetzen oder das Trennen von stabförmigen Kontakten (3) einer Kontaktbrücke (2) in der Axialrichtung (Z-Z) der ersten Durchgangsöffnungen (5) zu ermöglichen,

dadurch gekennzeichnet, dass der Aufnahmekör- per (4) mindestens eine Abflussöffnung (13) um- fasst, um Flüssigkeiten und/oder Schmutz zu ermög-

lichen, durch den inneren Hohlraum (14) des Auf- nahmekörpers (4) zu gehen und aus dem inneren Hohlraum (14) des Aufnahmekörpers (4) auszutre- ten, wobei ein Abflusskanal in dem Aufnahmekörper identifiziert ist, der sich von den ersten Durchgangs- öffnungen (5) zu der mindestens einen Abflussöff- nung (13) erstreckt, wobei die mindestens eine Ab- flussöffnung (13) einen Durchgang identifiziert, der bei Verwendung des elektrischen Sicherheitskon- takts einen freien Mindestquerschnitt von minde- stens 4 mm² aufweist, um den Abfluss von Flüssig- keiten und den Austritt von Schmutz zu gewährleis- ten.

2. Elektrischer Sicherheitskontakt nach Anspruch 1, wobei die mindestens eine Abflussöffnung (13) an einer Wand (15) positioniert ist, die eine Seite des Aufnahmekörpers (4) identifiziert, die der Seite ge- genüberliegt, die von der ersten Wand (10) identifiziert wird, die mit ersten Durchgangsöffnun- gen (5) versehen ist.

3. Elektrischer Sicherheitskontakt nach Anspruch 1 oder 2, wobei die mindestens eine Abflussöffnung (13) an einer Wand (15) positioniert ist, die eine Seite des Aufnahmekörpers (4) identifiziert, die parallel zu der Seite ist, die von der ersten Wand (10) identi- fiziert wird, die mit ersten Durchgangsöffnungen (5) versehen ist.

4. Elektrischer Sicherheitskontakt nach einem der An- sprüche 1 bis 3, **dadurch gekennzeichnet, dass** die mindestens eine Abflussöffnung (13) einen Durchgang identifiziert, der bei Verwendung des elektrischen Sicherheitskontakts einen freien Min- destquerschnitt von mindestens 6 mm² aufweist, um den Abfluss von Flüssigkeiten und den Austritt von Schmutz zu gewährleisten.

5. Elektrischer Sicherheitskontakt nach einem der An- sprüche 1 bis 4, wobei:

- der Aufnahmehohlkörper (4) folgendes um- fasst: eine hintere Bodenwand (9), Seitenwän- de, die aus der Bodenwand vorstehen und eine an den Seitenwänden befestigte Vorderwand (12), die die Funktion eines Verschlussdeckels des Aufnahmehohlkörpers (4) aufweist und
- die ersten Durchgangsöffnungen (5) und die mindestens eine Abflussöffnung (13) an unter- schiedlichen Seitenwänden (10, 15) des Auf- nahmhohlkörpers (4) ausgebildet sind.

6. Elektrischer Sicherheitskontakt nach einem der An- sprüche 1 bis 5, wobei die mindestens eine Abfluss- öffnung (13) einen Durchgang identifiziert, der:

- sich über einen Axialabschnitt innen des Auf-

nahmekörpers (4) erstreckt und
- durch innere Seitenwände (18) über die Gesamtlänge des erstreckten Durchgangs p innen des Aufnahmekörpers (4) begrenzt ist.

7. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 6, wobei die mindestens eine Abflussöffnung (13) zwei getrennte Abflussöffnungen (13) umfasst.
8. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 7, wobei:
 - der Aufnahmekörper (4) eine Trennwand (16), um den Hohlraum (14) in zwei getrennte Kammern zu teilen, eine jeweilige Feder (7) und ein jeweiliges Kontaktelement (6), die in jeder der Kammern aufgenommen sind, aufweist und
 - jede der beiden getrennten Kammern mit mindestens einer entsprechenden Abflussöffnung (13) versehen ist.
9. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 8, wobei der Aufnahmekörper (4) zweite Durchgangsöffnungen (8) aufweist, die geeignet sind, das Einführen von elektrischen Leitern in den Aufnahmekörper (4) bis zum Erreichen der Verdrahtungsklemmen (11) zu ermöglichen.
10. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 9, wobei:
 - die Federn (7) aus elektrisch leitfähigem Material hergestellt werden und
 - die elektrische Kontinuität zwischen einem Kontaktelement (6) und einer entsprechenden Verdrahtungsklemme (11) durch eine entsprechende der Federn (7) sichergestellt wird.
11. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 10, umfassend eine lösbare Brücke (3) aufweisend stangenförmige Kontakten (3), die in elektrischer Verbindung miteinander stehen und die parallel zueinander aus derselben Seite eines Kopfes (2a) der lösbaren Brücke (2) vorstehen, wobei die stangenförmigen Kontakte (3) durch die ersten Öffnungen (5) lösbar in den Aufnahmekörper (4) eingeführt werden/eingeführt werden können, um eine elektrische Kontinuität zwischen den Kontaktelementen (6) festzulegen.
12. Elektrischer Sicherheitskontakt nach einem der Ansprüche 1 bis 11, wobei der in dem Aufnahmekörper (4) identifizierte Abflusskanal von den ersten Durchgangsöffnungen (5) zu der mindestens einen Abflussöffnung (13) getrennt ist und nicht durch die Verdrahtungsklemmen (11) geht, um zu verhindern, dass Oxidationserscheinungen an den leitenden

Teilen der Verdrahtungsklemmen (11) beim Gebrauch auftreten.

5 Revendications

1. **Contact électrique de sécurité** avec un pont de contact amovible, comprenant un corps de réception (4) qui identifie une cavité interne (14) à l'intérieur de laquelle des éléments de contact (6) sont logés dans une position protégée, soutenus par des ressorts (7) respectifs et en continuité électrique avec des bornes de câblage (11) respectives pour conducteurs électriques, dans lequel :

- ledit corps de réception (4) comprend une première paroi (10) pourvue de premières ouvertures traversantes (5) d'axe prédéterminé (Z-Z) positionnées en correspondance avec lesdits éléments de contact (6) pour permettre l'insertion ou la déconnexion de contacts en forme de tige (3) d'un pont de contact (2) dans ladite direction axiale (Z-Z) desdites premières ouvertures traversantes (5),

caractérisé en ce que ledit corps de réception (4) comprend au moins une ouverture de drainage (13) pour permettre aux liquides et/ou à la saleté de passer et de sortir de ladite cavité interne (14) dudit corps de réception (4), dans ledit corps de réception étant identifié un canal de drainage étendu depuis lesdites premières ouvertures traversantes (5) jusqu'à ladite au moins une ouverture de drainage (13), dans lequel ladite au moins une ouverture de drainage (13) identifie un passage qui, lorsque ledit contact électrique de sécurité est utilisé, a une section transversale libre minimale d'au moins 4 mm² pour assurer le drainage de tout liquide et l'évacuation de toute saleté.

2. Contact électrique de sécurité selon la revendication 1, dans lequel ladite au moins une ouverture de drainage (13) est positionnée en correspondance avec une paroi (15) qui identifie un côté dudit corps de réception (4) opposé au côté identifié par ladite première paroi (10) pourvue de premières ouvertures traversantes (5).
3. Contact électrique de sécurité selon la revendication 1 ou 2, dans lequel ladite au moins une ouverture de drainage (13) est positionnée en correspondance avec une paroi (15) qui identifie un côté dudit corps de réception (4) parallèle au côté identifié par ladite première paroi (10) pourvue des premières ouvertures traversantes (5).
4. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 3, dans lequel ladite

- au moins une ouverture de drainage (13) identifie un passage qui, lorsque ledit contact électrique de sécurité est utilisé, a une section transversale libre minimale d'au moins 6 mm² pour assurer le drainage de tout liquide et l'évacuation de toute saleté.
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5. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 4, dans lequel :
- ledit corps creux de réception (4) comprend une paroi de fond arrière (9), des parois latérales faisant saillie à partir de ladite paroi de fond et une paroi avant (12) fixée aux parois latérales avec pour fonction de fermer le couvercle du corps creux de réception (4) et
 - lesdites premières ouvertures traversantes (5) et ladite au moins une ouverture de drainage (13) sont formées en correspondance avec des parois latérales (10, 15) distinctes dudit corps creux de réception (4).
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6. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 5, dans lequel ladite au moins une ouverture de drainage (13) identifie un passage qui est :
- étendu pour une section axiale à l'intérieur dudit corps de réception (4) et
 - délimité par des parois latérales internes (18) sur toute la longueur dudit passage étendu p à l'intérieur dudit corps de réception (4).
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7. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 6, dans lequel ladite au moins une ouverture de drainage (13) comprend deux ouvertures de drainage (13) distinctes.
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8. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 7, dans lequel :
- ledit corps de réception (4) comprend une cloison de séparation (16) pour diviser ladite cavité (14) en deux chambres séparées, un ressort (7) respectif et un élément de contact (6) respectif étant logés à l'intérieur de chacune desdites chambres et
 - chacune de ces deux chambres séparées est pourvue d'au moins un orifice de drainage (13) respectif.
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- 50
9. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 8, dans lequel ledit corps de réception (4) comprend des secondes ouvertures traversantes (8) aptes à permettre l'insertion dans ledit corps de réception (4) de conducteurs électriques jusqu'à ce qu'ils atteignent lesdites bornes de câblage (11).
- 55
10. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 9, dans lequel :
- lesdits ressorts (7) sont constitués d'un matériau conducteur d'électricité et
 - la continuité électrique entre un élément de contact (6) et une borne de câblage (11) respective est assurée par l'un desdits ressorts (7) respectifs.
11. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 10, comprenant un pont amovible (3) ayant des contacts en forme de tige (3) en communication électrique les uns avec les autres et faisant saillie parallèlement les uns aux autres du même côté d'une tête (2a) du pont amovible (2), lesdits contacts en forme de tige (3) étant insérés/insérables de manière amovible dans ledit corps de réception (4) à travers lesdites premières ouvertures (5) pour établir une continuité électrique entre lesdits éléments de contact (6).
12. Contact électrique de sécurité selon l'une quelconque des revendications 1 à 11, dans lequel ledit canal de drainage identifié dans ledit corps de réception (4) depuis lesdites premières ouvertures traversantes (5) jusqu'à ladite au moins une ouverture de drainage (13) est distinct et ne passe pas à travers lesdites bornes de câblage (11) afin d'éviter que des phénomènes d'oxydation des parties conductrices desdites bornes de câblage (11) ne se produisent en cours d'utilisation.

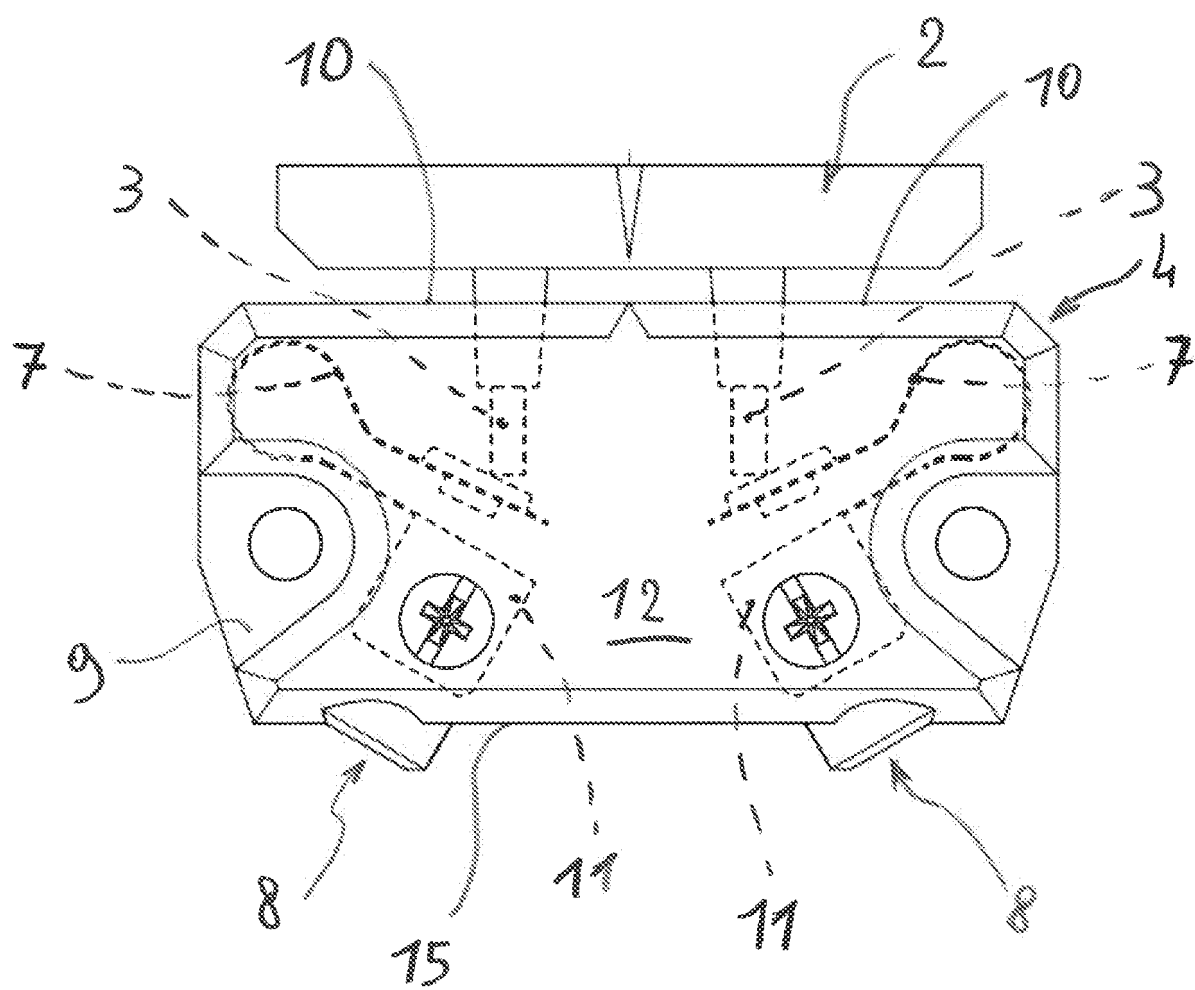


Fig. 1

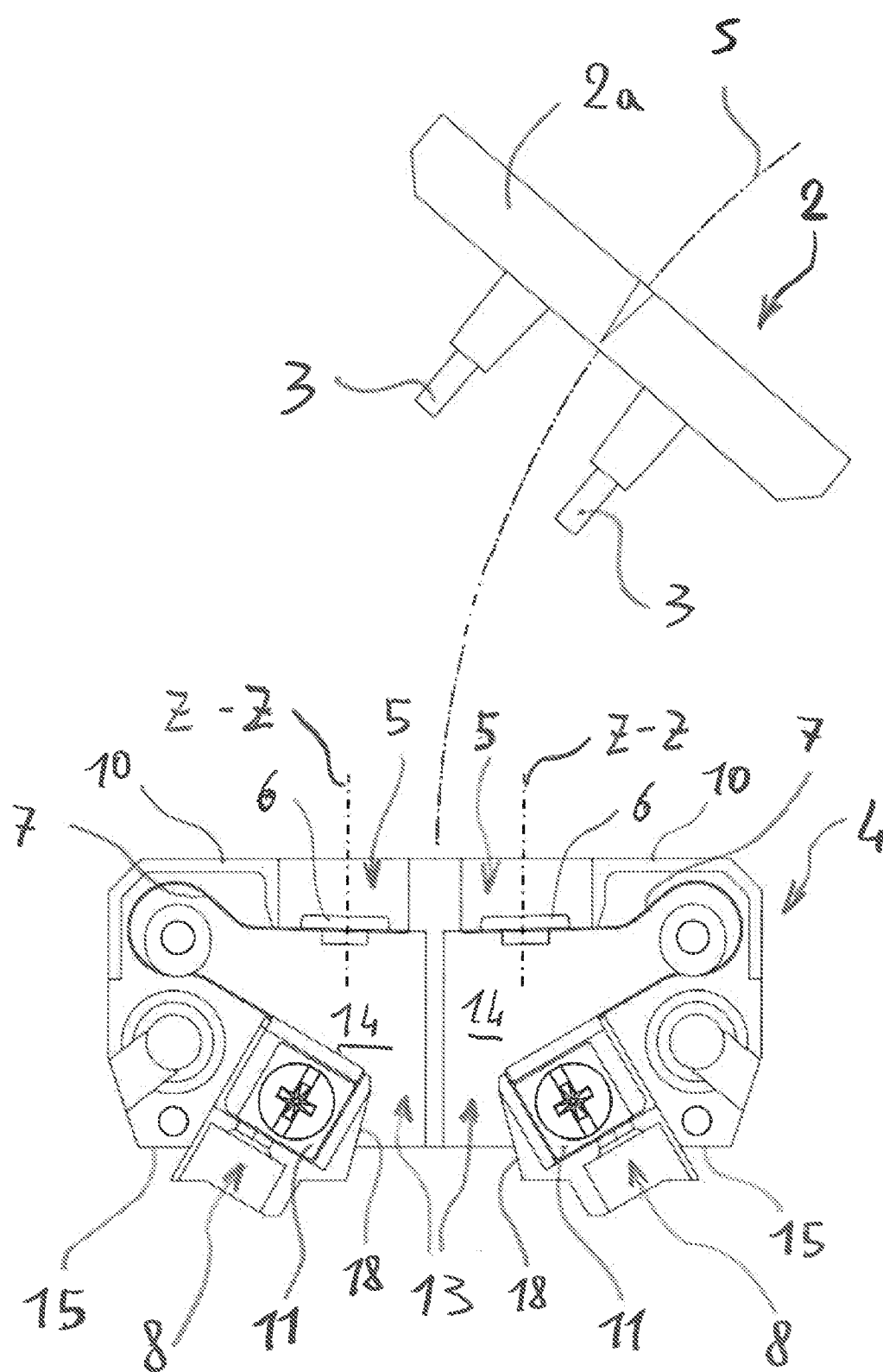
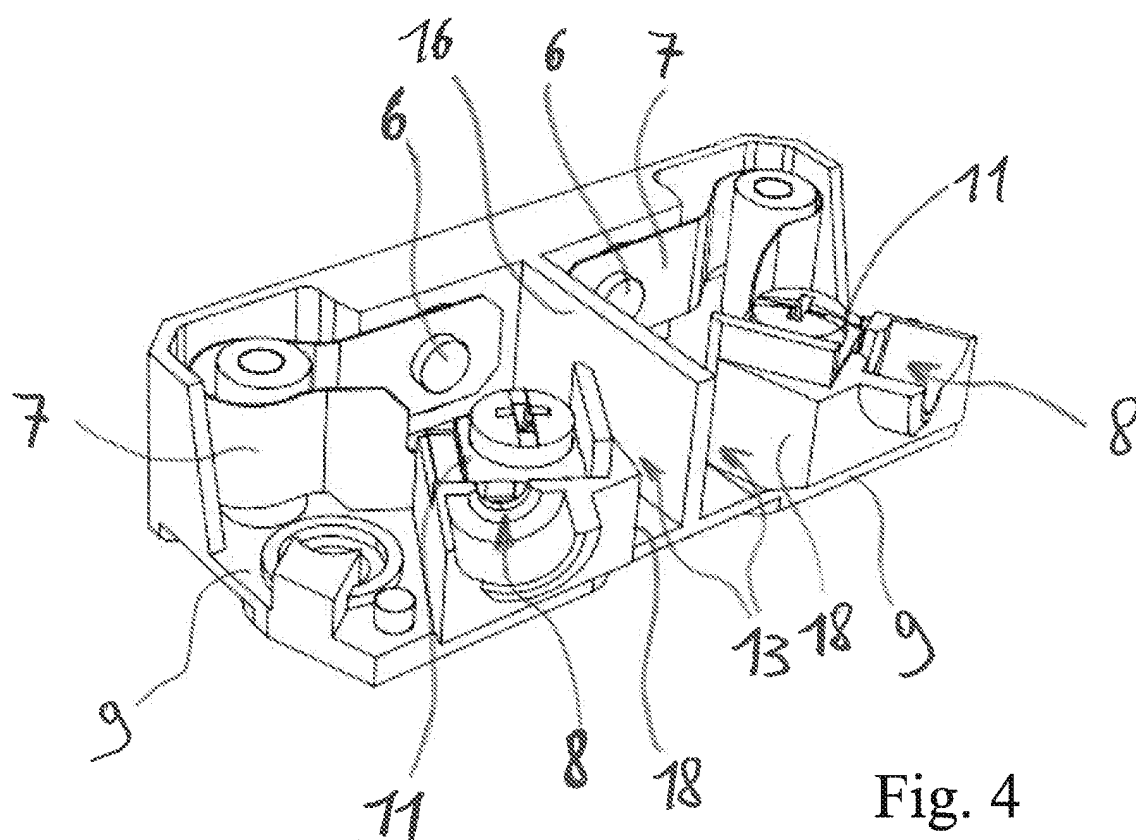
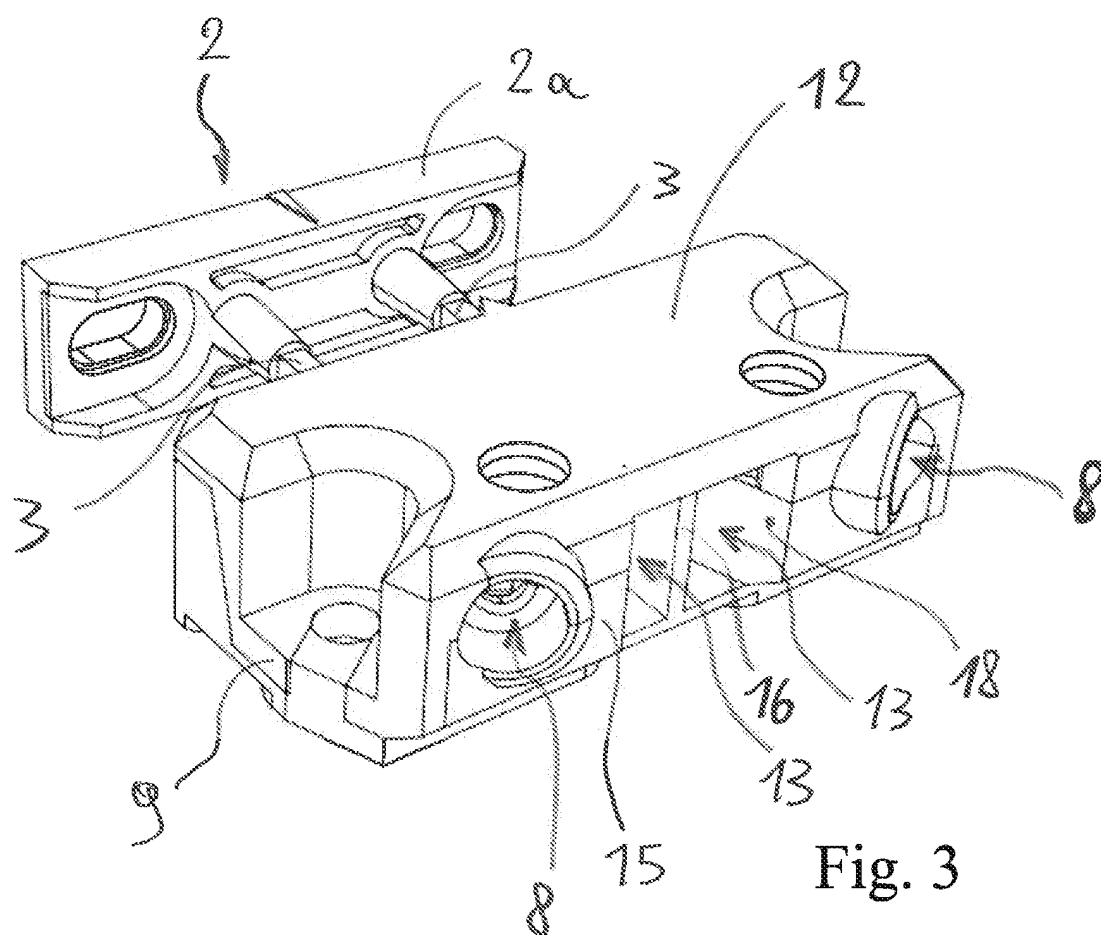


Fig. 2



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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