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(54) **CONTROL AND SIGNALLING DEVICE AND ADAPTER FOR A CONTROL AND SIGNALLING DEVICE**

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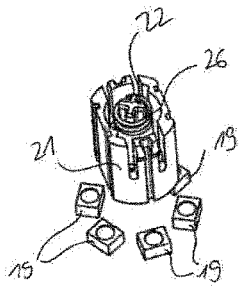
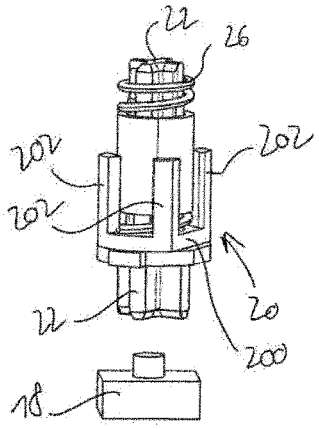
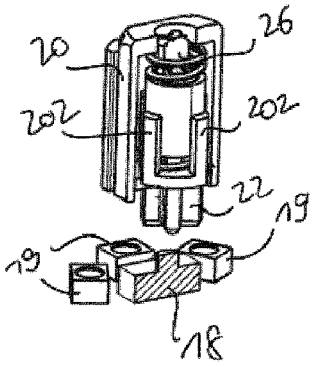
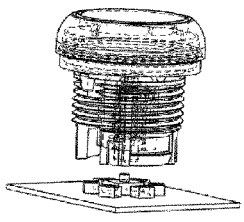
(57) **ABSTRACT**

The invention describes a control and signaling device which comprises the following: a cylindrical main body with two open ends, an operating element which is designed for insertion into one of the open ends of the main body and has a switching part that is movable relative to the main body, and a multipartite insert element which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element which elastically supports a portion , provided for operating the contact element, of the insert element in such a way that a pressure force of the insert element onto the contact element is limited to a prespecified force range.









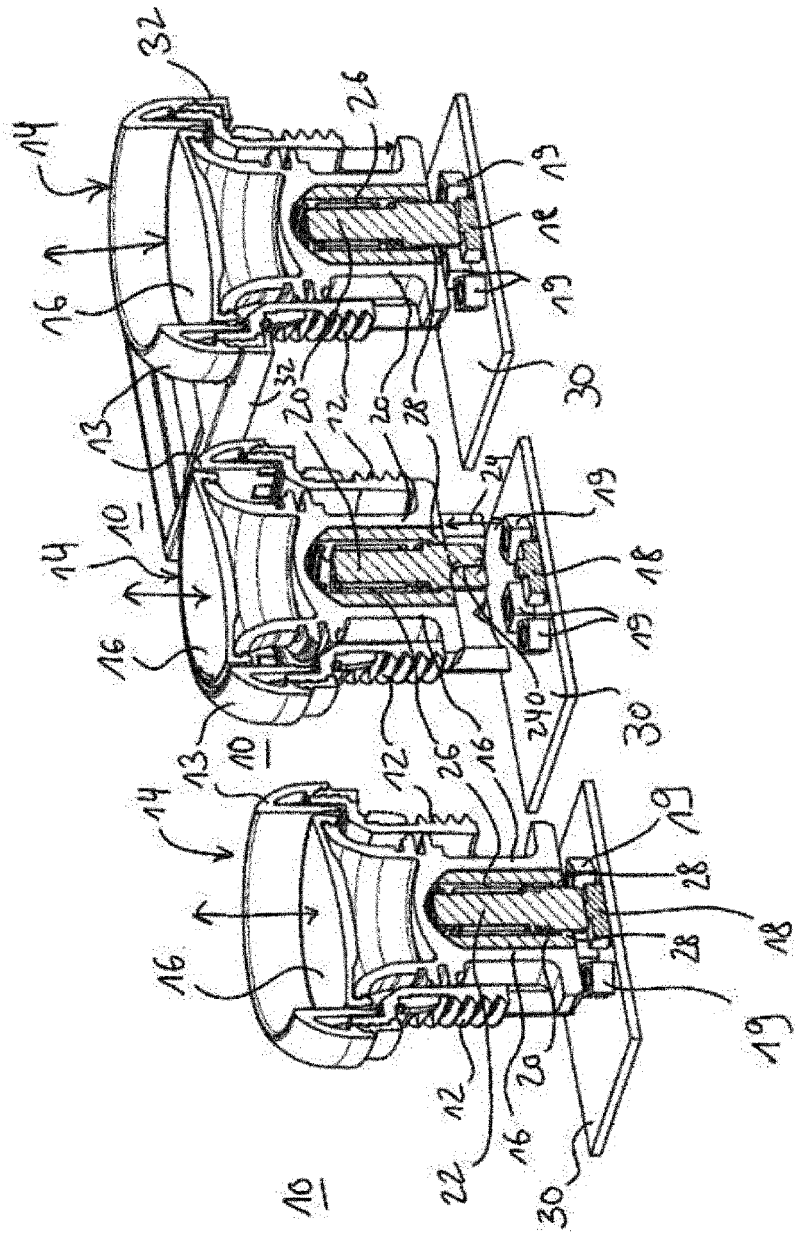


Fig. 1

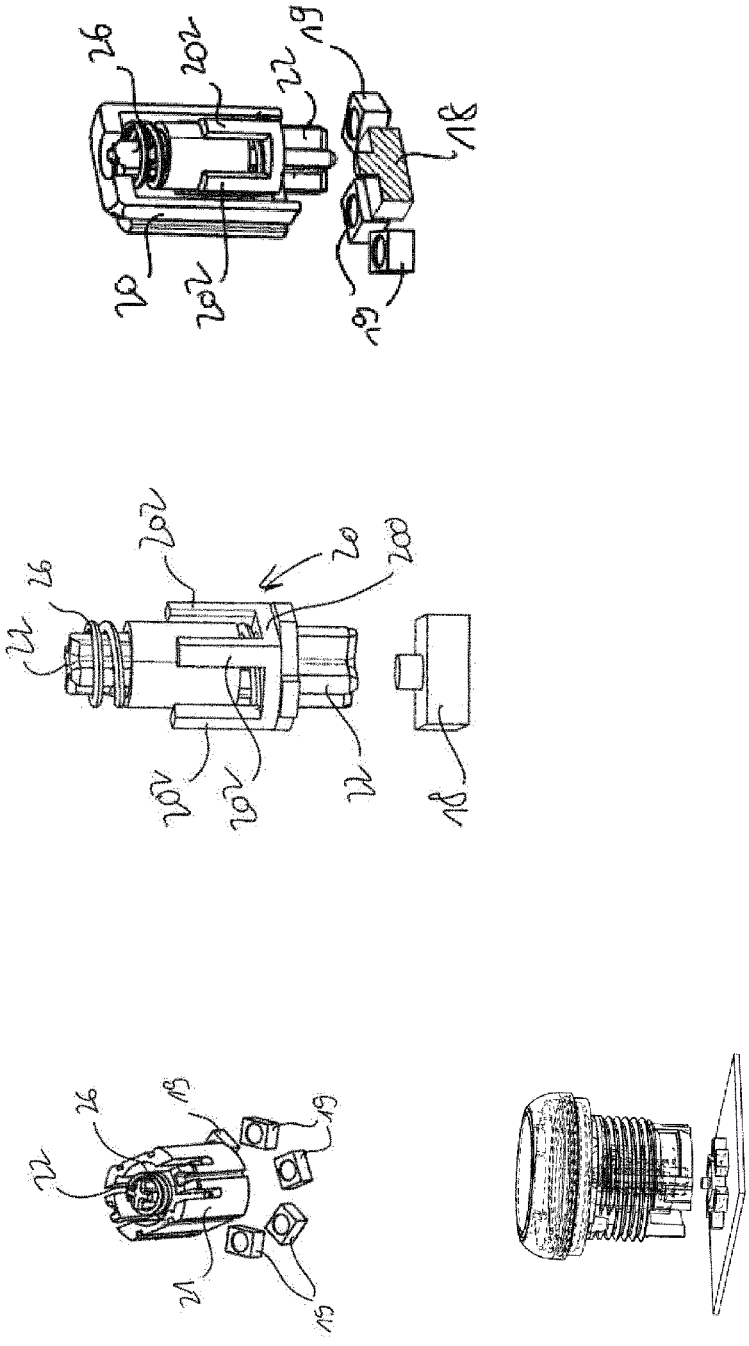

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Fig. 2

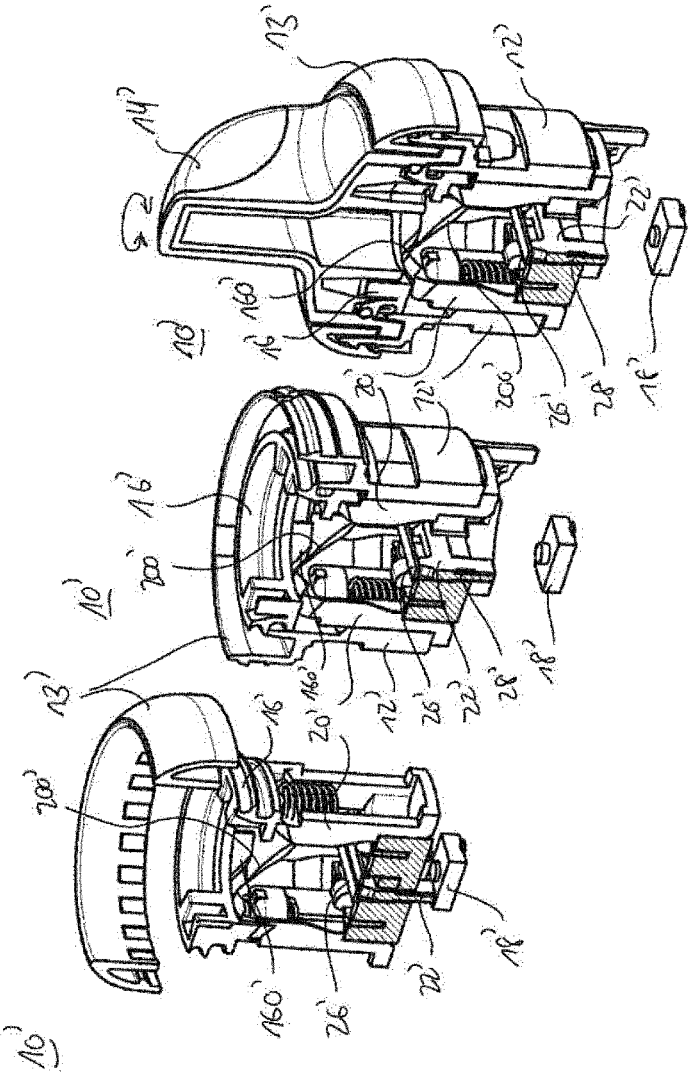

Fig. 3

CONTROL AND SIGNALLING DEVICE AND ADAPTER FOR A CONTROL AND SIGNALLING DEVICE

[0001] The present disclosure relates to a control and signaling device which has an operating element, such as a pushbutton or button, and a contact element, such as a microswitch, as well as an adapter for a control and signaling device.

[0002] Control and signaling devices of the RMQ-Titan® series of the applicant enable combinations of operating elements with contact elements. For example, RMQ-Titan® buttons of type M22 are designed for corresponding contact elements of type M22. These contact elements have prespecified switching paths, such as approximately 5.5 mm, and are designed for forces in the range of approximately 5-10 N.

[0003] Use of the operating elements with other contact elements is generally only possible if the contact elements have the prespecified switching paths and are designed for the specified force range of the corresponding operating element. For example, it is not readily possible to combine a button of the RMQ-Titan® series M22 with a microswitch since the prespecified switching path would not be sufficient to operate the microswitch and the specified force range during operation is not suitable for microswitches.

[0004] A combination of an operating unit with a microswitch is known from GB 1 233 400 A, which may be used, for example, with a pushbutton body for operating one or more microswitches. However, this is a special design which, for example, cannot readily be combined with, for example, a button of the RMQ-Titan® series M22 without further structural changes.

[0005] U.S. Pat. No. 3,624,330 A describes a switch with a body, a tappet assembly, and a contact assembly, wherein the tappet assembly has a first tappet, a second tappet, a tappet spring and a divider, wherein the first tappet is telescopically engaged with the second tappet, the second tappet is engaged with the divider and is axially movable therein, and the tappet spring is engaged between the first tappet and the divider, wherein the tappet assembly is movably connected to the body, wherein the contact assembly has a fixed contact, a movable contact, and the divider has means for engagement of the movable contact in the contact assembly.

[0006] DE 102 10 984 A1 describes a signal lamp for an optical display, comprising a housing with electrical conductor parts, a light-emitting diode in a thrust piece, which has a translucent luminous cap, a hollow rod, in the one end region of which the thrust piece is mounted in an axially displaceable manner, and the other end part of which is arranged in the housing, and an electrical switch, which is arranged in the hollow rod in the longitudinal direction thereof behind the light-emitting diode and can be operated by axial displacement of the pressure piece.

[0007] DE 10 2017 113 416 B3 describes a microswitch which consists of a cylindrical sleeve in which a piston is mounted in an axially movable manner. A contact pin is in turn mounted within the piston in an axially movable manner. The contact pin interacts with two mating contacts which are fixed spaced apart from one another in a base of the sleeve. The movement of the contact pin is supported by two springs. A return spring is arranged between the sleeve base and the piston and moves the piston into a starting position when the microswitch is not operated. A damping spring is arranged between the contact pin and an operating cap of the piston and ensures a soft placement of the contact pin on the mating contacts. In order to damp the movement of the contact pin only shortly before a placement on the mating contacts, the damping spring has a higher spring force than the return spring.

[0008] A control and signaling device and an adapter for a control and signaling device are now described below.

[0009] According to one aspect, a control and signaling device is disclosed which comprises the following: a cylindrical main body with two open ends, an operating element which is designed for insertion into one of the open ends of the main body and has a switching part movable relative to the main body, and a multipartite insert element which is designed to be inserted into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element which elastically supports a portion, provided for operating the contact element, of the insert element in such a way that a pressure force of the insert element onto the contact element is limited to a prespecified force range. Such a control and signaling device enables the shortening of the switching path and of the pressure force on the contact element so that a microswitch that requires a lower contact pressure than a conventional contact element may also be used as a contact element. In particular, a control and signaling device of the RMQ-Titan® series of the applicant, which is designed for use with conventional contact elements, may be modified by the insert element and the elastic element in such a way that a microswitch may also be used. A modular control and signaling device is therefore provided which may be used with contact elements that require different switching paths and/or contact pressures.

[0010] In a first embodiment of the control and signaling device, the switching part is axially movable relative to the main body, wherein the insert element comprises a pin-shaped central part, which forms the portion provided for operating the contact element, and a bracket, which is arranged coaxially with the central part and into which the elastic element can be inserted so that it is arranged coaxially with the central part and can exert a force on the central part, wherein the bracket is fixed in the switching part, and the central part is mounted in the bracket in an axially movable manner and is pressed against a stop in the direction of the contact element by the elastic element arranged coaxially between the bracket and the central part. The first embodiment is provided in particular for a push button as an operating element which is moved axially in the main body in order to operate the contact element.

[0011] In the first embodiment of the control and signaling device, the bracket may have a base and a plurality of finger-shaped retaining rods extending from the base approximately parallel to the central part, wherein the base has an opening approximately in its center for the central part to pass through, and the edge region of the opening in the base forms the stop for a radial projection of the central part. Such a base may, for example, be produced in one piece as a molded part. It also enables a simple assembly of the control and signaling device since the central part only has to be guided through the opening in the base of the bracket and the elastic element may be slipped, for example, in the

form of a cylinder open on both sides, onto the central part so that it is arranged between the finger-shaped retaining rods and the central part.

[0012] In the first embodiment of the control and signaling device, the switching path may be approximately 5 mm and, in the state where it is pressed up to the stop, the central part may project from the bracket far enough that the switching path is shortened to approximately 1 mm. Such a switching path is required specifically when using an RMQ-Titan® button of type M22 with a microswitch.

[0013] Furthermore, in the first embodiment of the control and signaling device, the elastic element may be a helical compression spring which is designed in such a way that its pressure force in the compressed state is approximately in the prespecified force range. A helical compression spring is advantageous since it is durable and, moreover, the pressure force may be adjusted relatively precisely by a suitable choice of the parameters of the spring.

[0014] In the second embodiment of the control and signaling device, the switching part is rotationally movable relative to the main body, wherein the insert element has a central part, which is axially movable relative to the main body by a rotation of the switching part in the main body, and a pressure part, which forms the portion provided for operating the contact element and is mechanically coupled to the central part in such a way that an axial movement of the central part relative to the main body causes a corresponding axial movement of the pressure part, and wherein the pressure part is pressed against a stop in the direction of the contact element by the elastic element fixed to the central part. The second embodiment is provided in particular for a rotary button as an operating element which is moved rotationally in the main body in order to operate the contact element.

[0015] In the second embodiment of the control and signaling device, the switching part can have a sliding surface with a predetermined angle in relation to the axis of rotation of the switching part and the central part can have a corresponding mating sliding surface, as a result of which the sliding surface slides on the mating sliding surface during a rotation of the switching part and thereby causes the axial movement of the central part relative to the main body. In this way, a conversion of the rotation of the switching part into a translation of the central part can be implemented with relatively few means. In addition, the use of pressure contact switches such as microswitches is made possible.

[0016] In a further development of the second embodiment of the control and signaling device, the switching path may be approximately 5 mm and, in the state where it is pressed up to the stop, the pressure part projects far enough beyond the other of the open ends of the main body that the switching path is shortened to approximately 1 mm. Such a switching path is required specifically when using an RMQ-Titan® button of type M22 with a microswitch.

[0017] According to a further development of the second embodiment of the control and signaling device, the elastic element may be a leaf spring which is designed in such a way that its pressure force in the bent state is approximately in the prespecified force range. The leaf spring may in particular be manufactured from a spring steel. A leaf spring may be mounted relatively easily, for example fastened, in particular clamped, at one end to the central part so that its other end can press on the pressure part and exert a contact pressure thereon.

[0018] According to a further aspect, an adapter for a control and signaling device is disclosed which has a cylindrical main body with two open ends and an operating element which is designed for insertion into one of the open ends of the main body and a switching part movable relative to the main body, wherein the adapter comprises the following: a multipartite insert element which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element, which elastically supports a portion, provided for operating the contact element, of the insert element with respect to the switching part in such a way that a pressure force of the insert element on the contact element is limited to a prespecified force range. Such an adapter may be used, for example, to extend the range of use of control and signaling devices of the RMQ-Titan® series since it enables use with a greater selection of contact elements.

[0019] In a first embodiment, the adapter is provided for a control and signaling device in which the switching part is axially movable relative to the main body. In the first embodiment of the adapter, the insert element comprises a pin-shaped central part, which forms the portion provided for operating the contact element, and a bracket, which is arranged coaxially with the central part and into which the elastic element can be inserted so that it is arranged coaxially with the central part and can exert a force on the central part, wherein the bracket can be fixed in the switching part, and the central part is mounted in the bracket in an axially movable manner and is pressed against a stop in the direction of the contact element by the elastic element arranged coaxially between the bracket and the central part. The first embodiment of the adapter is provided in particular for use in a push button as an operating element which is moved axially in the main body in order to operate the contact element.

[0020] In a second embodiment, the adapter is provided for a control and signaling device, in which the switching part is rotationally movable relative to the main body. In the second embodiment of the adapter, the insert element comprises a central part, which is axially movable relative to the main body by a rotation of the switching part in the main body, and a pressure part, which forms the portion provided for operating the contact element and is mechanically coupled to the central part in such a way that an axial movement of the central part relative to the main body causes a corresponding axial movement of the pressure part, and wherein the pressure part is pressed against a stop in the direction of the contact element by the elastic element fixed to the central part. The second embodiment of the adapter is provided in particular for use in a rotary button as an operating element, which is moved rotationally in the main body in order to operate the contact element.

[0021] Further features result from the following description in connection with the exemplary embodiments shown in the drawings.

[0022] In the drawings:

[0023] FIG. **1** shows a control and signaling device according to the first embodiment in different states;

[0024] FIG. **2** shows an embodiment of an adapter for a control and signaling device; and

[0025] FIG. **3** shows a control and signaling device according to the second embodiment in different states.

[0026] In the following description, identical, functionally identical and functionally related elements can be provided with the same reference signs. Absolute values are only given as examples in the following and are not to be understood as limiting.

[0027] FIG. **1** shows a control and signaling device **10**, configured as a push button, of the RMQ-Titan® series, which is arranged above a circuit board **30** with a microswitch **18**, mounted thereon, as a contact element. The microswitch **18** is surrounded by LEDs (light-emitting diodes) **19** arranged around it on the circuit board **30**. If elements of the control and signaling device **10** are transparent to light radiation, the LEDs **19** may signal, for example, things responsible for switching of the control and signaling device **10**, via the light radiation emerging in particular from the upper side.

[0028] The control and signaling device **10** has a cylindrical main body **12** with an external thread for screwing into a bracket **32** for control and signaling devices. An operating element **14** is inserted at the upper free end of the main body **12**. The operating element **14** has a switching part **16** which is axially movable relative to and in the main body **12**, as indicated by the double arrow. On its upper side, the switching part **16** has a touch surface for pushing the switching part **16** into the main body **12**. The switching part **16** has a cylindrical central section, the diameter of which is smaller than the inner diameter of the main body **12** so that it is axially movable in the main body **12**. Axially movable means a longitudinal movement capability along the cylinder axis of the main body **12**. By a fixing ring **13**, which is fastened to the upper free end of the main body, for example, by means of screws, the switching part **16** is held in the main body **12** in such a way that it cannot fall out or jump out of the main body **12** at the upper end. In the middle drawing of FIG. **1**, the switching part **16** is shown in the basic position, i.e., when the microswitch **18** is not activated, while in the left drawing of FIG. **1**, the switching part **16** is shown in the pressed-in state in which the microswitch **18** is activated.

[0029] Due to its small dimensions, the microswitch **18** is arranged at a distance from the above-described components of the control and signaling device **10** in such a way that, without additional measures, activation is not possible since the switching path to be bridged for activation of the microswitch **18** is too large and, in addition, the pressure force required for the microswitch **18** cannot be satisfied in some circumstances, i.e., the operating pressure acting on the switching part **16** is not in the force range prespecified for the microswitch **18**. In order to bridge the switching path **24** to the microswitch **18** at least in a portion **240** and to limit the pressure force on the microswitch **18** to a force range which is prespecified in particular for the activation of the microswitch **18**, a multipartite insert element is provided for insertion into the main body **12**.

[0030] The multipartite insert element has a bracket **20**, which is inserted in the lower cylindrical section of the switching part **16** and is fixed therein, i.e., is moved with the switching part **16**, as can be seen in the left and middle drawings in FIG. **1**. For example, the bracket **20** may be fastened, or screwed or glued, in a clamping manner in the switching part **16**. A pin-shaped central part **22** is arranged in an axially movable manner within the bracket **20**, specifically such that the bracket **20** is arranged coaxially with the central part **22**. The elastic element **26** is arranged in particular in the form of a helical compression spring between the bracket **20** and the central part **22**. In order to prevent the central part **22** from falling out of the bracket **20**, a stop **28** is provided at the lower end of the bracket **20** toward the contact element **28**. The elastic element **26** or the helical compression spring is clamped between a projection of the central part **22** and the upper closed end of the cylindrical section of the switching part **16** and thereby elastically supports the central part **22** in such a way that, in the depressed state of the switching part **16**, the pressure force acting on the microswitch **18** via the central part **22** is limited to a force range which corresponds in particular to the force range specified for the microswitch **18** or is comprised thereby.

[0031] As can be seen in the middle drawing of FIG. **1**, the lower portion of the central part **22** projects far enough from the switching part **16** that a portion **240** of the switching path **24** can be bridged thereby. Thus, the control and signaling device **10** can also be used with microswitches **18** having a relatively low overall height. In the constellation shown in the right drawing of FIG. **1**, the control and signaling device **10** is arranged at a greater distance than in the constellation of the microswitch **18** shown in the left drawing. In this case, the lower portion of the central part **22** projects further from the cylindrical lower section of the switching part **16** in the pressed-in state of the switching part **16**. The helical compression spring **26** ensures that the pressure force acting on the microswitch **18** through the central part **22** is within the prespecified force range. As the left and right drawing of FIG. **1** show, the control and signaling device **10** can be flexibly used in different constellations, that is to say, for example, at different distances from contact elements and also with contact elements having different overall heights.

[0032] FIG. **2** shows an embodiment of an insert element with the bracket **20**, which has a base **200** in the form of a cylindrical section with an opening in its center through which the pin-shaped central part **22** is guided so that both ends of the central part **22** project from the base **200**. Starting from the base **200**, finger-shaped retaining rods **202** extend approximately parallel to the central part **22** in order to mount the helical compression spring **26** coaxially between the central part **22** and the retaining rods **202** and to guide the base **200** in the switching part **16**. As shown at the top left in the drawing, the bracket **20** may be mounted with the central part **22** and the helical compression spring **26** in an insert part **21** which may be designed for insertion into the main body **12** of the control and signaling device **10**. The insert part **21** can be mounted in the main body **12** in an axially movable manner and can, for example, be moved in the direction of the microswitch **18** by pressing the switching part **16** into the main body **12**.

[0033] FIG. **3** shows a control and signaling device **10'**, configured as a rotary switch, of the RMQ-Titan® series, which is arranged above a circuit board with a microswitch **18'**, mounted thereon, as a contact element. The microswitch **18'** may be surrounded by LEDs arranged around it on the circuit board, similarly to that shown in FIG. **1**. If elements of the control and signaling device **10'** are transparent to light radiation, the LEDs may signal, for example, things responsible for switching of the control and signaling device **10'**, via the light radiation emerging in particular from the upper side.

[0034] The control and signaling device **10'** has a cylindrical main body **12'** with an external thread for screwing into a bracket for control and signaling devices. At the upper

free end of the main body **12'**, an operating element **14'** may be inserted, as shown in the right drawing in FIG. **3**. The operating element **14'** has a switching part **16'** that is rotationally movable relative to and in the main body **12'**, as indicated by the double arrow. At its upper side, the switching part **16'** has a gripping surface for rotating the switching part **16'** in the main body **12'**. The switching part **16'** has a cylindrical central section the diameter of which is smaller than the inner diameter of the main body **12'** so that it is rotationally movable in the main body **12'**. Rotationally movable means a rotation capability about the cylinder axis of the main body **12'**. By a fixing ring **13'**, which is fastened to the upper free end of the main body, for example, by means of screws, the switching part **16'** is held in the main body **12'** in such a way that it cannot fall out or jump out of the main body **12'** at the upper end. In the left and middle drawings of FIG. **3**, the control and signaling device **10'** is shown without the operating element **14'**, while the control and signaling device **10'** is shown with the inserted operating element **14'** in the right drawing of FIG. **3**.

[0035] Due to its small dimensions, the microswitch **18'** is arranged at a distance from the above-described components of the control and signaling device **10'** that an activation is not possible without additional measures since the switching path to be bridged for activation of the microswitch **18'** is too large and, in addition, the pressure force required for the microswitch **18'** cannot be satisfied in some circumstances, i.e., the operating pressure acting on the switching part **16'** is not within the force range prespecified for the microswitch **18'**. In order to bridge the switching path to the microswitch **18'** at least in a portion and to limit the pressure force on the microswitch **18'** to a force range which is prespecified in particular for the activation of the microswitch **18'**, a multipartite insert element is provided for insertion into the main body **12'**.

[0036] The multipartite insert element has a central part **20'** which is axially movable relative to the main body **12'** by a rotation of the switching part **16'** in the main body **12'**. The central part **20'** also has a pressure part **22'** which forms a portion provided for operating the microswitch **18'** and is mechanically coupled to the central part **20'** in such a way that an axial movement of the central part **20'** relative to the main body **12'** causes a corresponding axial movement of the pressure part **22'**. In this case, the pressure part **22'** is pressed against a stop **28'** in the direction of the microswitch **18'** by an elastic element **26'** in the form of a leaf spring fixed to the central part **20'**. A rotation of the switching part **16'** is converted by the mechanism described below into the axial movement of the central part **20'** and pressure part **22'**: For this purpose, the switching part **16'** has a sliding surface **160'** which is arranged at a first predetermined angle in relation to the axis of rotation of the switching part **16'**. Likewise, the central part **20'** has a corresponding mating sliding surface **200'** which is arranged at a second predetermined angle in relation to the axis of rotation of the switching part **16'**, which angle is approximately equal to the first angle, for example approximately 45°. When the switching part **16'** rotates, the sliding surface **160'** of the switching part **16'** slides on the mating sliding surface **200'** of the central part **20'**. Since the rotating switching part **16'** is not axially movable by the fixing ring **13'**, the central part **20'** is moved axially downward, i.e., in the direction of the contact element **18'** relative to the main body **12'**, namely in the main body **12'**, by the sliding surfaces **160'** and **200'** sliding on one another. In this way, the pressure part **22'** is also moved downward toward the microswitch **18'** so that when the central part **20'** is moved axially downward to the maximum amount, the pressure part **22'** presses on the microswitch **18'** such that it can be operated. As a result, the pressure part **22'** is pressed against the leaf spring **26'**, which is bent upward. The pressure force of the leaf spring **26'** is dimensioned in such a way that it is approximately in a force range which is prespecified for the microswitch **18'**.

[0037] As can be seen in FIG. **3**, the lower portion of the central part of the pressure part **26'** projects far enough from the switching part main body **12'** that a portion of the switching path can be bridged thereby. Thus, the control and signaling device **10'** may also be used with microswitches **18'** having a relatively low overall height. Depending on the arrangement of the sliding surfaces **160'**, **200'**, i.e., depending on the angle selection, it is possible to adjust how far the pressure part **26'** can be moved out of the main body **12'**. For example, when an angle of less than 45° of the sliding surfaces **160'**, **200'** in relation to the axis of the main body **12'** is selected, a larger switching path can be bridged than when an angle greater than 45° is selected. The control and signaling device **10'** may thus be used flexibly in different constellations, i.e., for example, at different distances from contact elements and also with contact elements having different overall heights.

1-10. (canceled)

11. A control and signaling device comprising

a cylindrical main body with two open ends,

an operating element which is designed for insertion into one of the open ends of the main body and has a switching part that is movable relative to the main body, and

a multipartite insert element which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element which elastically supports a portion , provided for operating the contact element, of the insert element in such a way that a pressure force of the portion on the contact element is limited to a prespecified force range,

wherein the switching part is axially movable relative to the main body, and wherein the insert element has a pin-shaped central part, which forms the portion provided for operating the contact element, and a bracket which is arranged coaxially with the central part and into which the elastic element can be inserted so that it is arranged coaxially with the central part and can exert a force on the central part, wherein the bracket is fixed in the switching part, and the central part is mounted in the bracket in an axially movable manner and is pressed against a stop in the direction of the contact element by the elastic element arranged coaxially between the bracket and the central part.

12. The control and signaling device according to claim **11**, wherein the bracket has a base and a plurality of finger-shaped retaining rods extending from the base approximately parallel to the central part, wherein the base has an opening approximately in its center for the central part to pass through, and the edge region of the opening in the base forms the stop for a radial projection of the central part.

13. The control and signaling device according to claim **11**, wherein the switching path is approximately 5 mm and, in the state where it is pressed up to the stop, the central part projects from the bracket far enough that the switching path is shortened to approximately 1 mm.

14. The control and signaling device according to claim **11**, wherein the elastic element is a helical compression spring designed in such a way that its pressure force in the compressed state is approximately in the prespecified force range.

15. A control and signaling device comprising

a cylindrical main body with two open ends,

an operating element which is designed for insertion into one of the open ends of the main body and has a switching part that is movable relative to the main body, and

a multipartite insert element, which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged on the other of the open ends and has an elastic element, which elastically supports a portion, provided for operating the contact element, of the insert element in such a way that a pressure force of the portion on the contact element is limited to a prespecified force range, wherein the switching part is rotationally movable relative to the main body, and wherein the insert element has a central part, which is axially movable relative to the main body by a rotation of the switching part in the main body, and a pressure part, which forms the portion provided for operating the contact element and is mechanically coupled to the central part in such a way that an axial movement of the central part relative to the main body causes a corresponding axial movement of the pressure part, and wherein the pressure part is pressed against a stop in the direction of the contact element by the elastic element fixed to the central part.

16. The control and signaling device according to claim **15**, wherein the switching part has a sliding surface with a predetermined angle in relation to the axis of rotation of the switching part and the central part has a corresponding mating sliding surface, as a result of which the sliding surface slides on the mating sliding surface during a rotation of the switching part and thereby causes the axial movement of the central part relative to the main body.

17. The control and signaling device according to claim **15**, wherein the switching path is approximately 5 mm and, in the state where it is pressed up to the stop, the pressure part projects beyond the other of the open ends of the main body far enough that the switching path is shortened to approximately 1 mm.

18. The control and signaling device according to claim **15**, wherein the elastic element is a leaf spring designed in such a way that its pressure force in the bent state is approximately in the prespecified force range.

19. An adapter for a control and signaling device, in particular according to claim **11**, which has a cylindrical main body with two open ends and an operating element, which is designed for insertion into one of the open ends of the main body and has a switching part, which is axially movable relative to the main body, wherein the adapter comprises the following:

a multipartite insert element which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element which elastically supports a portion, provided for operating the contact element, of the insert element in such a way that a pressure force of the insert element on the contact element is limited to a prespecified force range,

wherein the insert element has a pin-shaped central part, which forms the portion provided for operating the contact element, and a bracket which is arranged coaxially with the central part and into which the elastic element can be inserted so that it is arranged coaxially with the central part and can exert a force on the central part, wherein the bracket can be fixed in the switching part, and the central part is mounted in the bracket in an axially movable manner and is pressed against a stop in the direction of the contact element by the elastic element arranged coaxially between the bracket and the central part.

20. An adapter for a control and signaling device, in particular according claim **15**, which has a cylindrical main body with two open ends and an operating element, which is designed for insertion into one of the open ends of the main body and has a switching part, which is rotationally movable relative to the main body, wherein the adapter comprises the following:

a multipartite insert element which is designed for insertion into the main body for bridging at least one portion of a switching path from the switching part to a contact element arranged at the other of the open ends and has an elastic element which elastically supports a portion, provided for operating the contact element, of the insert element in such a way that a pressure force of the insert element on the contact element is limited to a prespecified force range,

wherein the insert element has a central part, which is axially movable relative to the main body by a rotation of the switching part in the main body, and a pressure part, which forms the portion provided for operating the contact element and is mechanically coupled to the central part in such a way that an axial movement of the central part relative to the main body causes a corresponding axial movement of the pressure part, and wherein the pressure part is pressed against a stop in the direction of the contact element by the elastic element fixed to the central part.

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