MULTIPART HOUSING FOR CONSUMPTION METERS AND A SECURING DEVICE FOR MULTIPART HOUSINGS

The present invention relates to the field of multipart housings for accommodating consumption meters. It also relates to securing devices to protect from an unauthorized opening of multipart housings for accommodating consumption meters.

Technological Background

Multipart housings for accommodating consumption meters are known from the prior art. In order to secure these housings from an unauthorized opening, screw connections are used which connect the housing parts to each other, the screw connections being locked, for example, or secured from unauthorized loosening by seals. When assembling the multipart housing, a plurality of parts and, for example, a screw, a screwdriver, a wrench and/or a seal with crimping pliers are to be handled to secure the housing, which makes the assembly of the housing difficult. Furthermore, the many parts increase the cost of the housing.

For example, EP 2 762 899 A1 shows an electricity meter comprising a lower housing part and an upper housing part, the lower housing part having first latching elements and the upper housing part having second latching elements, or vice versa, the first latching elements and the second latching elements being configured to latch into each other in such a way that, when the two housing parts are put together, said latching elements are then inside a closed housing formed by the two housing parts.

EP 1 659 411 A1 shows an electronic electricity meter with a cuboid housing, which contains all components and parts of an electronic counter including a printed circuit board with display and current sensors and which can be detachably connected to a meter platform, the meter platform containing connection means for the phases of the supply lines and conductor sections cooperating with the current sensors that cooperate with contacts of the meter platform when the housing is placed on the platform, and a sealable sealing element which extends through the housing and latches the housing to the platform.

Description of the Invention

It is an object of the invention to provide a multipart housing for accommodating a consumption meter, for example an electric meter or a water meter, which can be manufactured inexpensively and easily assembled, the multipart housing being effectively secured from an unauthorized opening.

This object is achieved by a multipart housing according to the invention for accommodating a consumption meter, with a first housing part having a latching device and a second housing part having a counter latching device, the latching device and the counter latching device forming a latching connection with each other in order to affix the first housing part and the second housing part against each other, and the latching device having a retaining element for retaining a securing device securing the latching connection. Furthermore, the object is achieved by a securing device for securing the latching connection of the multipart housing according to the invention, the securing device having a handling head and a securing element, and the securing element projecting from the handling head along its longitudinal direction and a counter retaining element running transversely with respect to the longitudinal direction for fixing the securing device in its securing position.

To establish the latching connection, it is therefore sufficient to combine the two housing parts, so that no additional parts or tools are necessary for this. The only part that is required to secure the latching connection and thus to protect the multipart housing from an unauthorized opening is the securing device, which is easy to handle.

The solution can be further improved by various configurations which are advantageous in themselves and, unless implemented differently, can be combined with each other as desired. These embodiments and the advantages associated with them are discussed below.

According to a first further embodiment, the retaining element is a latching projection projecting away from the counter latching device. The counter retaining element can consequently be configured to be complementary to the retaining element and, for example, as a retaining recess or as a retaining opening, such that the securing element can be configured without elements which project transversely with respect to its longitudinal direction and which can complicate the handling of the securing device.

According to a further embodiment, the latching device has a free end and a fixed end opposite the free end, the retaining element being arranged closer to the fixed end than to the free end. Particularly if the free end of the latching device can be deflected elastically from its latching position into its release position, the retaining element arranged closer to the fixed end ensures a more stable connection between the securing device and the latching device, since the latching device is less movable in the direction of the fixed end. In the latching position, the latching device is latched with the counter latching device and forms the latching connection. The latching connection is open in the release position.

According to a further embodiment, the latching device has a latching element for latching with a counter latching element of the counter latching device, the latching element being arranged closer to the free end than to the fixed end. In particular, if the free end can be deflected elastically, the latching forces to be applied to produce the latching connection can be kept low if the latching element is arranged closer to the free end than to the fixed end.

According to a further embodiment, the counter retaining element is arranged closer to a free end of the securing element than to the handling head, so that the retaining element and the counter retaining element of the securing element inserted into the housing are, if reachable at all, difficult to reach and thus secured against manipulation in the housing.

According to its further embodiment, the multipart housing has a guiding device for the securing device. The guiding device and the latching device, at least in the closed state of the latching connection, delimit a receiving gap for the securing device that secures the latching connection. The receiving gap guides the securing device and in particular the securing element when it is placed in the receiving gap, such that the securing device can be easily installed.

According to a further embodiment, the clearance of the receiving gap decreases at least partially in the receiving direction. Consequently, the receiving gap can have, at least in sections, a funnel-shaped cross section which widens in the direction opposite the receiving direction, thereby further simplifying the insertion of the securing device into the receiving gap and guiding the securing device even better during the insertion.

According to a further embodiment, the receiving gap has an insertion opening through which the securing device can be inserted into the receiving gap. The insertion opening faces away from the first housing part, such that the securing device can be inserted into the receiving gap in the direction of the first housing part and in particular in the direction of the latching connection formed by the latching device and the counter latching device.

According to a further embodiment, the securing element has a predetermined breaking point, which is configured to break under load transversely with respect to the longitudinal direction rather than at the sections of the securing element adjacent to the predetermined breaking point. Consequently, in order to open the multipart housing or to separate the two housing parts of the housing from each other, the securing element can be broken at the predetermined breaking point and thus destroyed. The housing is then no longer secured from an unauthorized opening. However, the condition of the security element can be used to assess

whether the housing was opened without authorization before the security element was inspected.

According to a further embodiment, the receiving gap has an ejection opening which faces the first housing part. The insertion opening and the ejection opening can be arranged opposite each other along the receiving direction. The section of the securing element arranged between the predetermined breaking point and the free end of the securing element can thus be ejected through the ejection opening from the receiving gap, in particular if the ejection opening forms a lower end of the receiving gap. The section of the securing element which encompasses the free end and is broken off at the predetermined breaking point can thus fall through the ejection opening in order not to impede an opening of the latching connection.

According to a further embodiment, the latching device, the counter latching device and the guiding device can each be elastically deflected at least in sections transversely with respect to the receiving direction. Due to the elastic deflectability of the latching device and the counter latching device, the latching connection can be easily produced. Because the guiding device too can be elastically deflected transversely with respect to the receiving direction, it can press the securing element in the direction of the latching device when the securing element is inserted in order to reliably produce the connection between the retaining element and the counter retaining element.

According to a further embodiment, the securing element can be elastically deformed transversely with respect to its longitudinal direction, in particular by forces occurring when the securing element is inserted into the receiving gap. If an attempt is now made to release the connection between the retaining element and the counter retaining element by deforming the latching device, the present device, the guiding device and/or the securing element from outside the housing, the latching device, the counter latching device and the guiding device and the securing element deform together and can form a press fitting with each other. The latching element and the counter latching element can therefore be connected via the securing element to the guiding device in a motion-transmitting manner. The deformation from the outside consequently does not readily lead to the release of the retaining element from the counter retaining element or to the opening of the latching connection.

According to a further embodiment, the second housing part has a continuous opening which connects the surroundings of the multipart housing to the receiving gap. Furthermore, according to one embodiment, the securing device and, for example, its handling head have a through opening which, when the securing device is fully inserted, that is, when the securing device is arranged in its securing position and secures the latching connection, connects the

receiving gap and/or connects the continuous opening of the second housing part to the surroundings of the multipart housing. A craftsman or technician accessing the consumption meter can guide, for example, a securing thread through the through openings, which securing thread is secured outside the housing by a seal, so that the multipart housing in addition to the securing device is protected from unauthorized opening.

According to a further embodiment, the second housing part forms an edge delimiting the insertion opening transversely with respect to the receiving direction. The edge has a receiving channel that opens counter to the receiving direction and at least partially or even completely surrounds the receiving direction.

According to a further embodiment, the securing device and in particular its handling head have a collar which extends in the longitudinal direction of the securing element and at least partially or even completely surrounding the longitudinal direction. The collar can be substantially complementary to the receiving channel and can be inserted therein in order to precisely define the position of the handling head in the receiving gap and in particular in the insertion opening.

According to a further embodiment, an insertion channel is arranged between the collar and a central section of the handling head into which the edge can be inserted. The insertion channel opens in the longitudinal direction. This further improves the positionability of the securing element.

According to a further embodiment, the edge and thus also the receiving channel surround the receiving direction. Furthermore, the collar also completely surrounds the longitudinal direction. The edge and the receiving channel as well as the collar and the insertion channel can jointly form a sealing device.

According to a further embodiment, the insertion channel which opens in the longitudinal direction has a recess on its base which is arranged opposite the longitudinal direction and which, together with the insert channel, at least partially or even completely surrounds the longitudinal direction. The recess defines a predetermined breaking point of the handling head, along which the central section can be broken out of the handling head. As a result, the force required to break the predetermined breaking point of the securing device can be introduced into the securing device more simply and effectively, in particular if the securing device is secured to the central section.

According to a further embodiment, the securing device is shaped in the form of a spike, pike, rod or bar.

The multipart housing and the securing device can each be provided separately or combined to form a secure multipart housing.

Brief Description of the Drawings

For a better understanding of the present invention, reference is made below to the drawings. The drawings only show exemplary embodiments of the subject matter of the invention. Features of these exemplary embodiments can be combined independently of each other. In the figures and the associated description, the same or equivalent parts are provided with the same reference characters.

Exemplary embodiments of the invention are described in reference to the following figures. Shown are:

Figure 1 a schematic sectional view of an exemplary embodiment of a multipart housing according to the invention,

Figure 2 a perspective partial view of the exemplary embodiment of Figure 1 with an exemplary embodiment of a securing device according to the invention,

Figure 3 a further perspective partial view of the exemplary embodiments in Figure 2,

Figure 4 a schematic sectional view of the exemplary embodiments in Figure 3,

Figure 5 a further perspective partial view of the exemplary embodiments in Figures 2 to 4,

Figure 6 a schematic view of the exemplary embodiments shown in Figure 5,

Figure 7 a further perspective partial view of the exemplary embodiments in Figures 2 to 6 with a seal,

Figure 8 a further schematic sectional view of the exemplary embodiments in Figures 2 to 6 with a tool for breaking the securing device, and

Figure 9 a further schematic sectional view of the exemplary embodiments in Figure 8 with the broken securing device.

Ways of Implementing the Invention

A first possible exemplary embodiment of a multipart housing 1 according to the invention for accommodating a consumption meter is shown in Figure 1. The multipart housing 1 has a first housing part 2 and a second housing part 3. The two housing parts 2, 3 are shown in an assembled state in which the multipart housing 1 is closed. The two housing parts 2, 3 can be housing shells or housing halves. Alternatively, one of the housing parts 2, 3 can be a cover of the multipart housing 1 and the remaining housing part 2, 3 can be part of a housing shell or a complete housing shell.

In order to prevent the two housing parts 2, 3 from unintentionally separating from each other, the first housing part 2 has a latching device 4 and the second housing part 3 has a counter latching device 5, which together form a latching connection 6, the latching connection 6 and housing part 2, 3 being secured to each other. Because of the closed latching connection 6 shown in the exemplary embodiment in Figure 1, the housing parts 2, 3 cannot be easily removed from each other, so that the housing parts 2, 3 are, for example, captively connected to each other.

The latching device 4 is shown by way of example as a latching tab with a fixed end 7 and a free end 8. The fixed end 7 is attached substantially immovably to a wall of the first housing part 2. The free end 8, on the other hand, can be deflected elastically in the exemplary embodiment in Figure 1 and is shown in its latching position. As an alternative to the exemplary embodiment in Figure 1, the latching device 4 can be mounted elastically and, for example, via a spring on the wall of the first housing part 2, so that the latching device 4 can be moved back and forth about a resting position.

The counter latching device 5 is also shown by way of example as a latching tab having a fixed end 9 and a free end 10. The fixed end 9 is attached substantially immovably to a wall of the second housing part 3. The free end 10, however, is elastically deflectable in the exemplary embodiment of Figure 1. As an alternative to the exemplary embodiment in Figure 1, the counter latching device 5 can be mounted elastically and, for example, by means of a spring on the wall of the second housing part 3, so that the counter latching device 5 can be moved back and forth about a resting position.

The free end 8 of the latching device 4 can taper in its course away from the fixed end 7 of the latching device 4 and form a tip having at least one bevel and in particular having two bevels. In the assembled state of the multipart housing 1 shown in Figure 1, the at least one bevel can point towards the counter latching device 5. If the tip has two bevels, one of the bevels

can point towards the counter latching device 5 and the other of the bevels away from the counter latching device 5. The bevel facing the counter latching device 5 prevents the latching device 4 from tilting with the counter latching device 5 when the multipart housing 1 is assembled and when the latching connection 6 is closed. The bevel pointing away from the counter latching device 5 prevents the latching device 4 from tilting with the safety device when it is moved into its securing position.

The latching device 4 has a latching element 11 and the counter latching device 5 has a counter latching element 12. The latching element 11 and the counter latching element 12 are latched together in the exemplary embodiment in Figure 1 and thus form the latching connection 6 which fixes the two housing parts 2, 3 to each other. As an example, the latching element 11 and the counter latching element 12 are shown as latching projections to be projected onto each other. Alternatively, the latching element 11 or the counter latching element 12 can be formed by a latch recess and/or a latch opening.

The latching element 11 and the counter latching element 12 are arranged, for example, in the region of the free ends 8, 10 of the latching device 4 and the counter latching device 5, respectively. The latching device 4 is provided with a retaining element 13 for retaining a securing device that secures the latching connection 6. The retaining element 13 is configured, for example, as a retaining or latching projection, but can alternatively also be formed as a recess or as an opening in the latching device 4. In particular, as shown in the exemplary embodiment in Figure 1, the retaining element 13 is arranged on a side of the latching device 4 which is opposite the side on which the latching element 11 is arranged. If the latching element 11 and the retaining element 13 are each configured as a projecting element, the latching element 11 and the retaining element 13 can extend in opposite directions and in particular project in these directions.

The retaining element 13 has a retaining surface 14 pointing away from the free end 8 and a guide surface 15 pointing away from the fixed end 7. The guide surface 15 is formed obliquely in order to simplify the insertion of the securing device. The holding surface 14 is configured to prevent the securing device from being removed if it rests against the stop 14 at least in sections. Such a retaining element 13 can also be referred to as a retaining or latching lug.

The multipart housing 1 and in particular its second housing part 3 is shown provided with a guiding device 16. Between the guiding device 16 and the latching device 4 or the counter latching device 5 there is a receiving gap A for receiving the securing device at least in sections. In particular, at least in the closed state of the latching connection 6, the guiding device 16 and the latching device 4 or the counter latching device 5 limit the receiving gap A

transversely with respect to a receiving direction R, in which the securing device can be inserted into the receiving gap A.

The clearance L running transversely with respect to the receiving direction R decreases in the receiving direction R at least in sections. For example, the guiding device 16 has a guiding section 17 which extends obliquely with respect to the receiving direction R and in the process approaches the latching device 4 or the counter latching device 5 in the receiving direction R. A guiding side 18 of the guiding device 16 facing the latching device 4 or the counter latching device 5 guides the securing device when it is inserted in the receiving gap A in the receiving direction R.

In the region of the maximum approach of the guiding device 16 toward the latching device 4, the clearance L of the receiving gap A in the exemplary embodiment in Figure 1, in which the securing device is not shown, can be less than a width of a section of the securing device which runs in the same direction and which is arranged in this region when the securing device secures the latching connection 6. In the region of the maximum approach, the guiding device 16 can have a free end 19.

Counter to the receiving direction R, the receiving gap A has an insertion opening E through which the securing device can be inserted into the receiving gap A. In the region of the maximum approach, the clearance is greater than zero, so that the guiding device 16 does not rest against the latching device 4, but is instead arranged at a distance from it. In the receiving direction R, the receiving gap thus has an ejection opening W by which the receiving gap A opens in the direction of the first housing part 2.

The second housing part 3 is provided with an edge 20 delimiting the insertion opening E transversely with respect to the receiving direction R, the edge 20 delimiting a receiving channel 21 that opens counter to the receiving direction R and at least partially or even completely surrounds the receiving direction R. In particular, the edge 20 can be arranged transversely with respect to the receiving direction R between the receiving gap A and the receiving channel 21. The receiving channel 21 can be groove-shaped. The receiving channel 21 can be part of a sealing device which seals the insertion opening.

The multipart housing 1 and in particular its second housing part 3 can be provided with a coding element 22, which ensures that the securing device is inserted into the receiving gap A in a correctly aligned manner. In the exemplary embodiment in Figure 1, the coding element 22 is arranged transversely with respect to the receiving direction R next to the receiving gap

A and, together with the edge 20, delimits a part of the receiving channel 21 transversely with respect to the receiving direction R.

Figure 2 shows the exemplary embodiment of Figure 1 with an exemplary embodiment of a securing device according to the invention schematically in a perspective partial view, the securing device being inserted only incompletely into the receiving gap A along the receiving direction R. The securing device 30 in order to secure the latching connection 6 of the multipart housing 1 has a handling head 31 and a securing element 32 projecting from the handling head 31 along its longitudinal direction D. While the securing element 32 is or has been inserted into the receiving gap A, the receiving direction R and the longitudinal direction D run parallel to each other.

The securing element 32 is provided with a counter retaining element 33 running transversely with respect to the longitudinal direction D, the counter retaining element 33 interacting with the retaining element 13 to fix the securing device 30 in its securing position and for this purpose a positive connection, for example a latching connection, is achieved. The counter retaining element 33 is shown by way of example as an opening which extends at least partially or even completely through the securing element 32 transversely with respect to the longitudinal direction D.

The handling head 31 has a counter latching element 34 which is at least partially complementary to the coding element 22 in order to ensure that the securing device 30 is correctly aligned in its securing position. In the securing position, the securing device 30 is inserted farther in the receiving direction R than shown in Figure 2 and, for example, completely inserted into the receiving gap A.

Between the handling head 31 and the counter retaining element 33, the securing element 32 has a predetermined breaking point 35 which is configured to break under mechanical load transversely with respect to the longitudinal direction D rather than at sections of the securing element 32 adjacent to the predetermined breaking point 35.

As can only be seen in Figure 2, the multipart housing 1 and in particular its second housing part 3 can have a through opening 23 which is arranged, for example, in a side wall 24 of the second housing part 3 which runs substantially parallel to the receiving direction R. The through opening 23 connects the surroundings of the multipart housing 1 to the receiving gap A.

The securing device 30 and in particular its handling head 31 can have a through opening 36 which, for example, extends through the handling head 31, at least in sections, in the

longitudinal direction D and opens into an upper side 37 pointing away from the securing element 32. In the securing position, the through opening 36 terminates in the receiving gap A or opens into the through opening 23, so that a securing thread can be passed through the through openings 23, 36.

The securing device 30 optionally has a tool holder 38 for at least partially holding a tool. With the tool, a mechanical force can be introduced into the securing device 30 that the securing device 30 passes on to the predetermined breaking point 35 in order to break it. For example, the tool holder is arranged in the upper side 37 and is configured as a slot that opens in the direction counter to the longitudinal direction D.

Figure 3 shows the exemplary embodiments in Figure 2 in the same schematic perspective view, the securing device 30 being inserted further into the receiving gap A along the receiving direction R, so that only the handling head 31 protrudes from the multipart housing 1 counter to the receiving direction R. Figure 4 shows the exemplary embodiments in Figure 3 in a schematic sectional view, the sectional plane running parallel to the receiving direction R. In Figures 3 and 4, the securing device 30 is inserted into the receiving gap A up to its standby position B. In the standby position B, the securing element 32 bears against the retaining element 13, the counter retaining element 33 being arranged at a distance from the retaining element 13 along the receiving direction R. In the standby position B, the securing device 30 can be easily removed from the receiving gap A counter to the receiving direction R.

A section of the securing element 32 from the viewpoint of the handling head 31 along the longitudinal direction D behind the predetermined breaking point 35 protrudes through the ejection opening W and is arranged in particular between the ejection opening W and/or the free end 19 of the guiding device 16 and the latching device 4. The guiding device 16 can be deflected elastically at least in sections and in particular in the region of its free end 19 and press the securing element 32 against the latching device 4 transversely with respect to the receiving direction R. If the securing device 30 is moved further into the receiving gap A along the receiving direction R, the guide surface 15 ensures that a free end 39 of the securing element 32 is pressed away from the latching device 4 transversely with respect to the receiving direction R. If the free end 39 has overcome or has passed the retaining element 13 in the receiving direction R, the retaining element 13 and the counter retaining element 33 latch together in the securing position of the securing device 30, so that the securing device 30 can no longer be removed from the receiving gap A counter to the receiving direction R. For example, the retaining element 13 engages with the counter retaining element 33 in the securing position.

Figure 5 shows the exemplary embodiments of Figures 2 to 4 in the same schematic perspective view, the securing device 30 being inserted further into the receiving gap A along the receiving direction R. Figure 6 shows the exemplary embodiments of Figure 5 in a schematic sectional view, the sectional plane running parallel to the receiving direction R. Figures 5 and 6 show the securing device 30 in its securing position S. In the securing position S, the retaining element 13 and the counter retaining element 33 are latched together in such a way that the securing device 30 cannot easily be removed from the receiving gap A counter to the receiving direction R. Rather, the holding surface 14 blocks a movement of the securing device 30 counter to the receiving direction R relative to the first housing part 2. For this purpose, the retaining surface 14 bears, for example, against a counter retaining surface 40 of the counter retaining element 33 running parallel to the retaining surface 14. The holding surface 14 extends, for example, transversely with respect to the receiving direction R.

In order to make it difficult to remove the securing device 30 counter to the receiving direction R from the receiving gap A, the upper side 37 can be arranged in alignment with an outer side 25 of the multipart housing 1 and, for example, the second housing part 3 when the securing device 30 is arranged in its securing position S. The insertion opening E is then arranged on the outside 25. For example, the outer side 25 is an upper side of the multipart housing 1, which upper side is oriented counter to gravity when the multipart housing 1 is mounted while in use.

The latching device 4, the counter latching device 5, the guiding device 16 and the securing device 30 can be elastically deformable or deflectable transversely with respect to the receiving direction R or to the longitudinal direction D. If the securing device 30 is arranged in its securing position S, the latching device 4, the counter latching device 5, the guiding device 16 and the securing device 30 can act upon each other with elastic forces and thus form a press fitting. In particular, the securing device 30 and, for example, its securing element 32 can connect the guiding device 16 to the latching device 4 and the counter latching device 5 in a movement-transmitting manner, so that the latching device 4, the counter latching device 5, the guiding device 16 and the securing device 30 can only be deflected or deformed together, which is made more difficult by a loosening of the retaining connection between the retaining element 13 and the counter retaining element 33.

As can be seen particularly well in Figure 6, the securing device 30 and in particular its handling head 31 have a collar 41 which extends in the longitudinal direction D and at least partially surrounds the longitudinal direction D. The collar 41 is substantially complementary to the receiving channel 21 and can be inserted therein in order to precisely define the position of the handling head 31 in the receiving gap A and in particular in the insertion opening E. If

the edge 20 and thus also the receiving channel 21 completely surround the receiving direction R and if the collar 41 also completely surrounds the longitudinal direction D, the collar 41 inserted in the receiving channel 21 can form a sealing device 42 together with the edge 20.

Between the collar 41 and a central section 43 of the handling head 31, the handling head 31 forms an insertion channel 44 into which the edge 20 can be inserted. The insertion channel 44, which opens in the longitudinal direction D, has a recess 45 on its bottom which is arranged opposite the longitudinal direction D and together with the insertion channel 44 at least partially or even completely surrounds the longitudinal direction D. The recess 45 defines a predetermined breaking point along which the central section 43 can be broken off of the handling head 31.

Figure 7 shows the exemplary embodiments of Figures 5 and 6 in the schematic, partial perspective view of Figure 5 with a further securing device. The securing device 30 is also shown in Figure 7 in its securing position S arranged within the receiving gap A. In order to be able to detect an unauthorized removal of the securing device 30 and thus an unauthorized opening of the multipart housing 1, the multipart housing 1 is shown together with a further securing device 50. The further securing device 50 has a securing thread 51 which is guided through the through openings 23, 36. Free ends of the security thread 51 are provided with a seal 52.

Figure 8 shows the exemplary embodiments of Figures 2 to 7 in the schematic view of Figure 6. Occasionally, the multipart housing 1 needs to be opened; for example, the consumption meters are read or serviced or have to be replaced. In order to cancel the securing of the latching connection 6 by the securing device 30, the securing device 30 and in particular the securing element 32 can be broken. For example, the securing element 32 can be broken at the predetermined breaking point 35.

According to Figure 8, a tool 60 can be inserted into the tool holder 38 to break the predetermined breaking point 35 and pivoted transversely with respect to the receiving direction R or the longitudinal direction D in such a way that the predetermined breaking point 25 is overloaded and is thereby broken. The swiveling movement of the tool 60 can be transmitted to the handling head 31 and from there to the securing element 32 specifically because of the positive engagement of the tool 60 with the tool holder 38. The handling head 31 can also break, for example along the recess of the receiving channel 21.

Figure 9 shows the exemplary embodiment of Figure 8, the handling head 31 and the tool 60 being removed from the multipart housing 1. Due to the force of gravity, the section of the

securing element 32 located between the predetermined breaking point 35 and the counter retaining element 33 or the free end 32 has fallen out of the receiving gap A and through the ejection opening W. In particular, this section of the securing element 32 is no longer situated transversely with respect to the receiving direction R between the guiding device 16 and the latching device 4 or the counter latching device 5, so that the latching device 4, and in particular its free end 8, can be moved away from the counter latching device 5 transversely with respect to the receiving direction R in order to open the latching connection 6.

Should the broken-off section of the securing element 32 not fall through the ejection opening W solely due to gravity, for example because the multipart housing 1 is arranged such that the ejection opening W is not the lower opening of the receiving gap A, but rather, for example, its lateral or upper opening, or because the elastic forces of the guiding device 16 hold the broken-off section, the broken-off section can simply be pushed through the ejection opening, for example with the tool 60, if, say, at least the central section 43 of the handling head 31 has been removed from the receiving gap A.

Reference Character List

1	multipart housing
2	first housing part
3	second housing part
4	latching device
5	counter latching device
6	latching connection
7,9	fixed end
8,10	free end
11	latching element
12	counter latching element
13	retaining element
14	retaining surface
15	guide surface
16	guiding device
17	guiding section
18	guiding side
19	free end
20	edge
21	receiving channel
22	coding element
23	continuous opening
24	side wall
25	outer side
30	securing device
31	handling head
32	securing element
33	counter retaining element
34	counter coding element
35	predetermined breaking point
36	continuous opening
37	upper side
38	tool holder
39	free end
40	counter surface
41	collar
42	sealing device
43	central section
44	insertion channel
45	recess
50	additional securing device
51	security thread
52	seal
60	tool
A	receiving gap
B	standby position
D	longitudinal direction
E	insertion opening
L	clearance
R	receiving direction
S	securing position
W	ejection opening

Claims

1. A multipart housing (1) for accommodating a consumption meter, comprising

a first housing part (2) having a latching device (4) and a second housing part (3) having a counter latching device (5),

the latching device (4) and the counter latching device (5) forming a latching connection (6) with each other in order to fix the first housing part (2) and the second housing part (3) to each other,

characterized in that

the latching device (4) has a retaining element (13) for retaining a securing device (30) that secures the latching connection (6).

2. The multipart housing (1) according to claim 1, **characterized in that** the retaining element (13) is a latching projection projecting away from the counter latching device (5).

3. The multipart housing (1) according to claim 1 or 2, **characterized in that** the latching device (4) has a free end (7) and a fixed end (8) opposite the free end (7), the retaining element (13) being arranged closer to the fixed end (8) than to the free end (7).

4. The multipart housing (1) according to claim 3, **characterized in that** the latching device (4) has a latching element (11) for latching with a counter latching element (12) of the counter latching device (5), the latching element (11) being arranged closer to the free end (7) than to the fixed end (8).

5. The multipart housing (1) according to any one of claims 1 to 4, **characterized in that** the multipart housing (1) has a guiding device (16) for the securing device (30), the guiding device (16) and the latching device (4), at least in the closed state of the latching connection (6), delimiting a receiving gap (A) for the securing device (30) that secures the latching connection (6) transversely with respect to a receiving direction (R), wherein the receiving gap (A) is running in the receiving direction (R).

6. The multipart housing (1) according to claim 5, **characterized in that** the clearance (L) of the receiving gap (A) decreases in the receiving direction (R) at least in sections.

7. The multipart housing (1) according to claim 5 or 6, **characterized in that** the receiving gap (A) has an insertion opening (E), wherein the insertion opening (E) faces away from the first housing part (2).

8. The multipart housing (1) according to any one of claims 5 to 7, **characterized in that** the receiving gap (A) has an ejection opening (W) which faces toward the first housing part (2).

9. The multipart housing (1) according to any one of claims 5 to 8, **characterized in that** the latching device (4), the counter latching device (5) and the guiding device (16) are each at least in sections elastically deflectable transversely with respect to the receiving direction (R).

10. The multipart housing (1) according to any one of claims 5 to 9, **characterized in that** the second housing part (3) has a continuous opening (23) which connects the surroundings of the multipart housing (1) to the receiving gap (A).

11. The multipart housing (1) according to any one of claims 7 to 10, **characterized in that** the second housing part (3) forms an edge (20) delimiting the insertion opening (E) transversely with respect to the receiving direction (R), wherein the edge (20) delimits a receiving channel (21) which opens counter to the receiving direction (R) and at least partially surrounds the receiving direction (R).

12. A securing device (30) for securing the latching connection (6) of the multipart housing (1) according to any one of claims 1 to 11,

characterized in that

the securing device (30) has a handling head (31) and a securing element (32), wherein the securing element (32) projects from the handling head (31) along its longitudinal direction (D) and has a counter retaining element (33) extending transversely with respect to the longitudinal direction (D) for fixing the securing device (30) in its securing position (S).

13. The securing device (30) according to claim 12, **characterized in that** the securing element (32) is elastically deformable.

14. The securing device (30) according to claim 12 or 13, **characterized in that** the securing element (32) has a predetermined breaking point (35) which is configured to break under load transversely with respect to the longitudinal direction (D) rather than at sections of the securing element (32) adjacent to the predetermined breaking point (35).

15. The securing device (30) according to any one of claims 12 to 14, **characterized in that** the handling head (31) has a collar (41) which opens in the longitudinal direction (D) and at least partially surrounds the longitudinal direction (D).