

Title: Mounting arrangement for a door actuator

Description

The present invention relates to a mounting arrangement for a door operator for actuating a door, including a mounting plate, which mounting plate is configured to be mounted at a reception such as a door leaf, a door transom, a wall, a ceiling or the like, wherein the door operator is attached to the mounting plate.

State-of-the-art

Door operators are mounted to a reception in a known way, in that most of the time screws are used, which can pass through the door operator, and are then screwed to the reception. If a mounting plate is used, the latter can be initially mounted to the reception in that for example several screws are used, most of the time wood screws or anchor screws. Once the mounting plate is mounted to the reception, the door operator is placed and attached again by screws, which are screwed to the mounting plate, passing through the door operator, in orthogonal direction to the mounting plate. It is disadvantageous, that, after mounting the door operator, the screw connection on the mounting plate is visible. As a consequence, cover caps are often used, which cover the reception holes receiving the screws in the door operator.

It is furthermore disadvantageous if, in case of connecting the door operator to the mounting plate by screws, a large number of screws needs to be used. At least four screws are used in the corners of the door operator, in order to connect the latter to the mounting plate. However, it is desirable to reduce the number of fastening elements to be used. Furthermore, it should be avoided to have to provide a plurality of threaded bores in the mounting plate, in order to be able allocate respective threaded bores to several screws to be used. Furthermore, it is disadvantageous that, if the door operator is already mounted to the mounting plate, the mounting plate still remains visible. Very often the mounting plate has geometrical dimensions which correspond to the external dimensions of the door operator. As a consequence, the mounting plate still remains visible with the door operator already mounted.

Therefore, it is the object of the present invention to provide a mounting arrangement for a door operator, which overcomes the disadvantages of the aforementioned state-of-the-art and which allows to easily mount the door operator to the mounting plate. The object of the present invention is in particular to provide a mounting arrangement for a door operator to a mounting plate which requires a small amount of fastening elements, wherein preferably the fastening elements are not visible or at least are not

directly visible once the door operator is completely mounted.

This problem is solved based on a mounting arrangement for a door operator according to the generic part of claim 1 in conjunction with the characterizing features. Advantageous further developments of the invention are indicated in the dependent claims.

Disclosure of the invention

The invention includes the technical teaching that the mounting plate has at least one retaining portion, which, for disposing the door operator at the mounting plate in a clamping manner, positively engages in at least one corresponding counter-retaining portion in the door operator.

In this case, the invention is based on the idea that, by means of a simple positive connection, the door operator can be clamped to the mounting plate. In this case, the clamping arrangement of the door operator at the mounting plate describes a geometric form closure, which however is determined such that the door operator is already disposed at the mounting plate without play and is able to bear load. The retaining portion, which can engage in the counter-retaining portion, is provided for this purpose. In this case, the engagement is positive in that the door operator is

clamped to the mounting plate by the form closure. In case the mounting plate is already mounted to a reception, the door operator just needs to be placed onto the mounting plate, wherein said placing is effected from one direction or from a series of directions, by means of which the retaining portion can be brought into engagement with the corresponding counter-retaining portion.

According to a further development of the mounting arrangement, a fastening element can be provided by means of which the clamping arrangement of the door operator at the mounting plate can be generated. The fastening element may be configured in that the positive engagement of the retaining portion in the counter-retaining portion is generated by the fastening element. In case the fastening element is configured for example as a screw, which can be screwed into the door operator, the screw, when being screwed into the door operator, can act against the mounting plate such as to generate the engagement of the retaining portion in the counter-retaining portion.

Furthermore, the fastening element is able to achieve an arrangement retaining the door operator at the mounting plate, which action assists the clamping arrangement of the door operator at the mounting plate. The door operator may be disposed for example with a first side in a clamping manner on the mounting plate, in that the retaining portion engages in the counter-retaining portion, wherein one or

more fastening elements are provided on a second side, which provide for screwing the door operator to the mounting plate. On the one hand, the door operator is retained at the mounting plate by means of this screw connection, on the other hand, the clamping arrangement of the retaining portion in the counter-retaining portion is generated and/or supported.

Preferably, the door operator has a housing in which the counter-retaining portion is fitted, wherein the counter-retaining portion is configured as a recess or as an undercut formed by a projection. The recess may form a depression in the housing, into which the retaining portion of the mounting plate can engage. If the housing has a projection, an undercut is thereby created, and the retaining portion of the mounting plate can form a geometric form closure with the undercut, in order to likewise reach a clamping arrangement of the door operator at the mounting plate.

It is particularly advantageous, if the counter-retaining portion is fitted on the inside of the housing of the door operator, such that the mounting plate is enclosed by the housing once the door operator is disposed at the mounting plate. When the door operator is disposed at the mounting plate, the housing can terminate flush with the reception, to which the door operator is being attached.

It is particularly advantageous, if the retaining portion has the shape of a fastening tongue at the mounting plate. The mounting plate may extend in a plane, which can be brought to a flat abutment against the reception. In this case, the fastening tongue can protrude from the plane, in order to engage in the counter-retaining portion at the door operator which has a distance to the underside of the door operator, in particular to the underside of the housing of the door operator, by means of which the door operator can sit on the surface of the reception, if the latter is being attached to the reception via the mounting plate. As a consequence, the retaining portion, in the shape of a fastening tongue, protrudes from the plane of the mounting plate, wherein the mounting plate may have several fastening tongues.

Advantageously, the retaining portion is disposed at the mounting plate such that the door operator can be disposed on the mounting plate by orthogonally placing it and preferably subsequently by laterally displacing it on the mounting plate. Placing the door operator orthogonally onto the mounting plate is done from the direction normal to the surface of the plane in which the mounting plate extends. If the retaining portion is located at one end side of the mounting plate, then the door operator can be placed at first orthogonally onto the mounting plate via this end side. By means of a subsequent lateral displacement, the retaining portion can reach the counter-retaining portion in

the door operator, wherein only then the door operator is definitely placed flat onto the mounting plate. As a consequence, a placing-tilting-displacing movement is performed to ensure that the retaining portion initially engages in the counter-retaining portion in order to subsequently place the door operator flat onto the reception, and to ensure that the mounting plate is completely enclosed by the housing of the door operator.

It is advantageous if the mounting plate has an elongate extension, wherein at least one retaining portion is disposed at the long end of the mounting plate. Door operators have an elongate extension according to regular geometric construction, such that the mounting plate can be adapted to the elongate structural shape of the door operator. In this case, it is advantageous if a retaining portion is disposed at the long end of the mounting plate, in particular a fastening tongue may be disposed at the long end of the mounting plate. If a clamping between the mounting plate and the door operator is generated by the retaining portion of the mounting plate engaging in the counter-retaining portion in the door operator, this clamping is generated preferably at the end side of the door operator, wherein it is furthermore advantageous, if the at least one fastening element is disposed at the opposite long end of the mounting plate. As a result, the door operator is connected to the mounting plate at the ends of

its long side, whereby an improved stability of the door operator is achieved by its arrangement on the reception.

In a further advantage, the mounting plate may have a fastening portion which is preferably disposed opposite the retaining portion at the mounting plate, wherein at least one fastening element can be disposed pressing against the fastening portion. The fastening portion may have for example the shape of a link-plate bent rectangularly out of the plane of the mounting plate. It is with this link-plate that the fastening elements can cooperate, wherein the fastening elements, for example in the shape of screws, may be screwable into the housing of the door operator. If the screws are being screwed into the housing, they may push against the fastening portion, which action assists the positive engagement of the retaining portion in the counter-retaining portion in the door operator. As a consequence, on a first side, a clamping arrangement of the door operator at the mounting plate is created, and on an opposite side, an attachment by means of the fastening portion in operative connection with at least one and preferably two fastening elements.

According to a further development of the mounting arrangement, the fastening element is configured as a screw, in particular a set screw, a headless screw and/or a countersunk screw, wherein, in the housing of the door operator, at least one threaded bore is fitted, into which the

fastening element is screwable and extends partially into an allocated hole in the fastening portion of the mounting plate. As a consequence, on a first side, a form closure is created by the clamping arrangement of the retaining portion in the counter-retaining portion, wherein on an opposite side, a positive arrangement of the door operator on the mounting plate is formed, in that the fastening element and preferably two fastening elements are screwed into the housing of the door operator, wherein the fastening elements partially extend into the fastening portion of the mounting plate. As a result, the door operator is arranged at the mounting plate by means of two opposite positive connections.

According to another possible embodiment, the mounting plate has a fastening portion with a clamping ramp, against which the at least one tightening screw can be braced for clamping the door operator on the mounting plate. The fastening portion with a clamping ramp, just like the fastening tongue for forming the retaining portion, may be bent out of the plane of the mounting plate. A clamping ramp is created below the bent-out portion, and the tightening screw can be inserted between the clamping ramp and the reception, on which the mounting plate is fitted. By screwing the tightening screw into the housing of the door operator, a preferably cone-shaped point of the tightening screw moves towards the clamping ramp such that the tightening screw can engage under the fastening

portion of the mounting plate. If for example, a clamping arrangement is created on a first side by the retaining portion engaging in the counter-retaining portion, a tightening screw can be provided on an opposite side of the door operator, which screw engages under the clamping ramp of the fastening portion of the mounting plate. At the same time, a pressure of the tightening screw against the clamping ramp pushes the retaining portion into the counter-retaining portion. In this case, the clamping ramp is configured at a long end of the mounting plate preferably opposite to the retaining portion, wherein the mounting plate is preferably configured as a one-piece stamped-bent sheet metal component. In particular the fastening portions can be configured by an operation in which the sheet metal component is bent for building the mounting plate. Obviously, the mounting plate may be manufactured from a different material, such as die-cast aluminum or zinc die-cast or plastic material, for example. Preferably, the mounting plate may present at least two retaining portions which are preferably disposed opposite to each other at the mounting plate, they are in particular conformed to the latter. In this case, a first retaining portion may be configured as a fastening tongue for engaging in the door operator and preferably by horizontally displacing the door operator along the elongate extension, wherein an opposite second retaining portion is configured as at least one latching hook, which is configured preferably for latching in at least one latching opening by pressing the

door operator vertically against the mounting plate. In this case, the vertical pressing is preferably executed from an orthogonal direction such that a tilting movement of the door operator is performed above the mounting plate. The attachment is realized in this case such that the door operator is at first placed with an end side onto the mounting plate in order to latch the retaining portion in the counter-retaining portion. Subsequently, the tilting movement about the retaining portion is performed in order to have the one or more latching hooks latch into the latching opening. This is done by pressing the door operator vertically against the mounting plate.

For forming at least one retaining portion, the mounting plate may have at least one fastening link-plate configured laterally with regard to the elongate extension, preferably in the shape of a wing, which link-plate is configured for a clamping engagement in a counter-retaining portion laterally provided in the door operator. Preferably, respectively two wing-shaped fastening link-plates may be located opposite to each other at the mounting plate. A plurality of them may be provided in pairs at the mounting plate, wherein each wing-shaped fastening link-plate can engage in a respective allocated counter-retaining portion, preferably in a recess provided inside in the housing. The fastening link-plates, like the fastening tongue, may be configured as portions bent out of the plane of the

mounting plate, which can latch in respective correspondingly configured recesses in the housing.

According to another advantageous embodiment, the fastening portion may be configured as a portion approximately rectangularly bent out of the plane of the mounting plate, which portion is preferably connectable to the door operator by means of a screw element and a clamping plate. In particular by tightening the screw element, the fastening portion can be braced in a clamping direction against the housing of the door operator by means of the clamping plate, such that the fastening link-plates are insertable in a clamping manner into the counter-retaining portions provided in the door operator.

According to another possible embodiment, the mounting plate has at least two retaining portions, which are disposed laterally with regard to the elongate extension of the mounting plate and preferably opposite to each other at the latter, wherein preferably at least one retaining portion is configured as a fastening tongue for engaging in a recess and an approximately opposite retaining portion is configured as a resiliently movable snap hook, which can snap in a snap opening provided in the door opener. In this case, the snap hook fulfils a function similar to the one of the latching hook, which is latchable in a latching opening. The latching opening and/or the snap opening may be configured as throughpasses in the housing such that a

tool can press against the latching hook, respectively against the snap hook, in order to release the snap connection.

Preferred embodiments

Further measures enhancing the invention will be illustrated in detail in conjunction with preferred embodiments of the invention. The following Figures illustrate in a diagrammatical way:

Figure 1: a perspective view of a first embodiment of a mounting arrangement of a door operator at a mounting plate in an airborne view,

Figure 2: an arrangement according to Figure 1 in an installed view,

Figure 3: another embodiment of a mounting arrangement of a door operator at a mounting plate in an airborne view,

Figure 4: the mounting arrangement according to Figure 3 in an installed condition,

Figure 5: another embodiment of a mounting arrangement of a door operator at a mounting plate in an airborne view,

Figure 6: the mounting arrangement according to Figure 5 in an installed condition,

Figure 7: another embodiment of a mounting arrangement of a door operator at a mounting plate in an airborne view,

Figure 8: the arrangement according to Figure 7 in an installed condition,

Figure 9: another embodiment of a mounting arrangement of a door operator at a mounting plate in an airborne view,

Figure 10: the arrangement according to Figure 9 in an installed condition,

Figure 11: a cross-sectional view of a door operator and a mounting plate, wherein the connection between the door operator and the mounting plate is configured according to another embodiment,

Figure 12: a cross-sectional view of a door operator and a mounting plate, wherein the connection between the door operator and the mounting plate is configured according to another embodiment,

Figure 13: a cross-sectional view of a door operator and a mounting plate, wherein the connection between the door operator and the mounting plate is configured according to yet another embodiment.

The Figures 1 and 2 show a possible embodiment of a mounting arrangement for a door operator 10, which serves to actuate a door and can be mounted to a reception such as a door leaf, a door transom, a wall, a ceiling or the like via a mounting plate 11. The mounting plate 11 has holes 30, through which the screw elements can pass in order to initially screw the mounting plate 11 to a reception. Then, the door operator 10, illustrated in the shape of its housing 15, can be affixed to the mounting plate 11.

For attaching the door operator 10 to the mounting plate 11, the mounting plate 11 has a retaining portion 12, which is configured in the shape of a fastening tongue 12. Furthermore, on the inside, the housing 15 has a counter-retaining portion 13, which is configured as a recess 13. When the housing 15 of the door operator 10 is placed onto the mounting plate 11, preferably initially on the side, on which the retaining portion 12 and the counter-retaining portion 13 are provided, the retaining portion 12 can positively engage in the counter-retaining portion 13. When

the housing 15 of the door operator 10 completely covers the mounting plate 11, the housing 15 completely encloses the mounting plate 11. As a result, the mounting plate 11 is completely received underneath and in the housing 15. In particular, the housing 15 bears on the reception with its complete circumference, such that, once the housing 15 is mounted, the mounting plate 11 is no longer visible from the outside.

Opposite to the fastening tongue 12, a fastening portion 16a is affixed to the mounting plate 11. The mounting plate 11 is configured as a stamped-bent sheet metal component, and the counter-retaining portion 13 as well as the fastening portion 16a are manufactured by reshaping. The retaining portion 12 as well as the fastening portion 16a are bent out of the plane, in which the mounting plate 11 extends, to form link-plate-like bent portions. As a consequence, on the one hand, the fastening tongue 12 can engage in the recess 13, furthermore the bores 31, which are fitted into the housing 15 of the door operator 10, can be aligned with the holes 18, which are fitted in the fastening portion 16 of the mounting plate 11. When the fastening elements 14, in the shape of screws 14, are screwed into the bores 31, the pressure tips 32 at the ends of the screws 14 can engage in the holes 18 in the fastening portion 16a. When the screws 14 are tightened in the bores 31, on the one hand, a form closure of the pressure tips 32 originates in the holes 18, and on the

other hand, the fastening tongue 12 is positively pressed into the recess 13, by bracing the mounting plate 11 in the housing 15 of the door operator 10. Compressive stress builds up in longitudinal direction in the mounting plate 11, and the fastening tongue 12 is reliably and in a clamping manner introduced into the recess 13 in the housing 15 of the door operator 10.

Figures 3 and 4 show another embodiment of the mounting arrangement for a door operator 10 at a mounting plate 11. The mounting plate 11 has again a retaining portion 12, which, for the clamping arrangement of the door operator 10 at the mounting plate 11, can engage in a corresponding counter-retaining portion 13 in the shape of a recess 13. On the opposite side of the retaining portion 12, the mounting plate 11 has a fastening portion 16b. The fastening portion 16b has a clamping ramp 19 by having bent the fastening portion 16b, as an angled area, out of the plane of the mounting plate 11. When the illustrated tightening screws 20 are screwed into the bores 31 in the housing 15 of the door operator 10, cone tips 33, provided at the ends of the tightening screws 20, reach abutment against the clamping ramp 19. Like in the first embodiment, compressive stress builds up in the longitudinal direction in the mounting plate 11 such that the fastening tongue 12 is pressed into the recess 13 in the housing 15 of the door operator 10. At the same time a form closure originates between the cone tips 33 of the tightening screws 20 and

the clamping ramp 19 such that the door operator 10 is positively arranged at both end sides at the mounting plate 11 and is clamped simultaneously.

Figures 5 and 6 show another embodiment of a mounting arrangement for attaching a door operator 10 to a mounting plate 11. According to this embodiment, no fastening elements 14 or 20 are provided. The arrangement of the door operator 10 is exclusively realized via two retaining portions 12 of the mounting plate 11, which are located respectively opposite to each other at the long end of the mounting plate 11. At a first long end, the mounting plate 11 has a fastening tongue 12, which can engage in the recess 13 in the housing 15 of the door operator 10 in a clamping manner. On the opposite side, at the long end, the mounting plate 11 has more retaining portions 12 which are configured in the shape of latching hooks 21. They are able to latch in latching openings 22 in the housing 15 of the door operator 10. When initially the housing 15 is placed onto the mounting plate 11, in the illustration on the left hand side, in the first mounting step, the fastening tongue 12 can engage in the recess 13. In another mounting step, the housing 15 covering the mounting plate 11 is pressed onto the latter such that the latching hooks 21 latch in the latching openings 22. This action results in an arrangement retaining the door operator 10 at the mounting plate 11, wherein for releasing the arrangement, a tool, passing from the outside of the housing 15 through

the latching openings 22, can disengage the latching hooks 21 from the latching engagement.

Figures 7 and 8 show another embodiment of a mounting arrangement for an arrangement retaining the door operator 10 at a mounting plate 11. For forming the retaining portions 12, laterally with regard to its elongate extension, the mounting plate 11 has wing-shaped fastening link-plates 29, which are configured to engage in a clamping manner in counter-retaining portions 13 provided laterally in the door operator 10. The illustration shows the counter-retaining portions 13 with a ramp, such that, during lateral displacement in longitudinal direction of the mounting plate 11, the fastening link-plates 29 can be braced in the counter-retaining portions 13, in that the housing 15 is slightly displaced in the longitudinal direction with regard to the mounting plate 11. Furthermore, a screw element 23 with a clamping plate 24 is illustrated, wherein the screw element 23 is intended to pass through the bore 31 in the housing 15 of the door operator 10. The mounting plate 11 has a fastening portion 16c against which the clamping plate 24 comes to bear, when the screw element 23 is screwed into the clamping plate 24. By screwing the screw element 23 into the clamping plate 24, the mounting plate 11 is displaced in relation to the housing 15, in that the clamping plate 24 presses against the fastening portion 16c. The mounting plate 11 is thereby displaced to the right in the housing 15 such that the fastening link-plates 29 are

interlocked in the recesses 13 in the housing 15. As a result, a clamping arrangement of the housing 15 at the mounting plate 11 is achieved.

Figures 9 and 10 show another embodiment of a mounting arrangement for an arrangement retaining the door operator 10 at a mounting plate 11. In the same way as in the preceding embodiment, the mounting plate 11 has wing-shaped fastening link-plates 29 which are insertable in a clamping manner in allocated recesses 13 in the housing 15 of the door operator 10. The screws 14 are screwed into the fastening portion 16a of the mounting plate 11 such that, with the housing 15 being disposed on the mounting plate 11, a form closure is achieved both by means of the fastening link-plates 29 in the recesses 13, and by screwing the screws 14 in screw holes 34 in the fastening portion 16a.

Figures 11, 12, and 13 show cross-sectional views through the housing 15 and through the mounting plate 11, wherein the housing 15 is respectively disposed and retained on the mounting plate 11. According to these embodiments, the mounting plate 11 has at least two retaining portions 12, which are located laterally with regard to the elongate extension of the mounting plate 11. According to Figure 11, one retaining portion 12 is configured as a fastening tongue 25, which engages in a recess 26. On the opposite side, a snap-hook 27 is configured at the mounting plate 11, which

hook latches in a snap-opening 28 in the housing 15 of the door operator 10.

According to Figure 12, the mounting plate 11 has two retaining portions 12 in the shape of snap hooks 27 which are respectively latched in allocated snap openings 28 in the housing 15 of the door operator 10. Figure 13 represents another embodiment, in which the mounting plate 11, on a first side, has a retaining portion 12 in the shape of a fastening tongue 25 for engaging in a recess 26, wherein, on the opposite side, the mounting plate 11 has a fastening portion 16b, against which a fastening element 14 can be screwed in order to establish a clamping connection between the mounting plate and the housing 15 of the door operator 10.

The invention in its configuration is not limited to the above presented preferred embodiments. On the contrary, a number of variants is conceivable, which make use of the presented solution, even with basically different types of configurations. All features and/or advantages including the constructional details, spatial dispositions and method steps, which result from the claims, the description or the drawings, may be essential to the invention, both by themselves and in their most various combinations. The bores 31, the recesses 26, the snap openings 28, the latching openings 22 as well as all other openings in the housing 15 of the door operator 10 may be closed off by

plugs, such that no openings are visible from the outside, once the door operator 10 is completely mounted to the mounting plate 11. The different configurations of the fastening portions 16a, 16b, 16c may be inter-combined with differently configured retaining portions 12, for example in the shape of fastening tongues 12, 25 or in the shape of fastening link-plates 29. In particular two and preferably four fastening link-plates 29 may be provided at the long side of the mounting plate 11, which are located in pairs opposite each other at the mounting plate 11. If, for example altogether four fastening link-plates 29 are provided at the mounting plate 11, the position thereof forming a square, which is preferably stretched out in the longitudinal direction of the mounting plate 11, a reliable arrangement of the mounting plate 11 at the door operator 10 is achieved, in that, by means of simple fastening elements 14, a slight lateral displacement of the housing 15 against the mounting plate 11 is sufficient to bring the respective fastening link-plates 29 in a clamping arrangement with the allocated recesses 13 in the housing 15 of the door operator 10.

List of reference numerals

10	door operator
11	mounting plate
12	retaining portion, fastening tongue
13	counter-retaining portion, recess
14	fastening element, screw
15	housing
16a	fastening portion
16b	fastening portion
16c	fastening portion
17	threaded bore
18	hole
19	clamping ramp
20	tightening screw
21	latching hook
22	latching opening
23	screw element
24	clamping plate
25	fastening tongue
26	recess
27	snap hook
28	snap opening
29	fastening link-plate

30	hole
31	bore
32	pressure tip
33	cone tip
34	screw hole

Patent claims

1. A mounting arrangement for a door operator (10) for actuating a door, including a mounting plate (11), which mounting plate (11) is configured to be mounted to a reception such as a door leaf, a door transom, a wall, a ceiling or the like, wherein the door operator (10) is attached to the mounting plate (11),
characterized in that the mounting plate (11) has at least one retaining portion (12), which, for arranging the door operator (10) at the mounting plate (11) in a clamping manner, positively engages in at least one corresponding counter-retaining portion (13) in the door operator (10).
2. A mounting arrangement according to claim 1, **characterized in that** at least one fastening element (14) is provided, by means of which the clamping arrangement of the door operator (10) at the mounting plate (11) can be generated.
3. A mounting arrangement according to claim 1 or 2, **characterized in that** an arrangement retaining the door operator (10) at the mounting plate (11) can be generated by the fastening element (14), which arrangement assists the clamping

arrangement of the door operator (10) at the mounting plate (11).

4. A mounting arrangement according to any of the claims 1 to 3, **characterized in that** the door operator (10) has a housing (15) in which the counter-retaining portion (13) is fitted, wherein the counter-retaining portion (13) is configured as a recess (13) or as an undercut in the shape of a projection.
5. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the counter-retaining portion (13) is fitted inside the housing (15) of the door operator (10) such that the mounting plate (11) is enclosed by the housing (15), once the door operator (10) is disposed at the mounting plate (11).
6. A mounting arrangement according to any of the aforementioned claims, characterized **in that** the retaining portion (12) has the shape of a fastening tongue (12) at the mounting plate (11).
7. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the retaining portion (12) and the counter-retaining portion (13) are configured such that the door

operator (10) can be arranged on the mounting plate (11) by orthogonally placing it and laterally displacing it on the latter.

8. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the mounting plate (11) has an elongate extension, wherein at least one retaining portion (12) is disposed at the long end of the mounting plate (11).
9. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the mounting plate (11) has a fastening portion (16a), which is preferably disposed opposite to the retaining portion (12) at the mounting plate (11), wherein at least one fastening element (14) can be arranged to press against the fastening portion (16a).
10. A mounting arrangement according to claim 9, **characterized in that** the fastening element (14) is configured as a screw (14), in particular a set screw, a headless screw and/or a countersunk screw, wherein, in the housing (15) of the door operator (10), at least one threaded bore (17) is fitted, into which the fastening element (14) is screwable and extends partially into an allocated

hole (18) in the fastening portion (16) of the mounting plate (11).

11. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the mounting plate (11) has a fastening portion (16b) with a clamping ramp (19), against which at least one tightening screw (20) can be braced for clamping the door operator (10) on the mounting plate (11).
12. A mounting arrangement according to claim 11, **characterized in that** the clamping ramp (19) is configured at a long end of the mounting plate (11) preferably opposite to the retaining portion (12), wherein the mounting plate (11) is preferably configured as a one-piece stamped-bent sheet metal component.
13. A mounting arrangement according to claim 11, **characterized in that** the clamping ramp (19) at a long end of the mounting plate (11) is preferably configured opposite to the retaining portion (12), wherein the mounting plate (11) is configured from die-cast aluminum or zinc die-cast or plastic material, in particular as one piece.

14. A mounting arrangement according to any of the aforementioned claims, characterized **in that** the mounting plate (11) has at least two retaining portions (12) which are disposed preferably opposite to each other at the mounting plate (11), in particular conformed to the latter.
15. A mounting arrangement according to any of the aforementioned claims, **characterized in that** a first retaining portion (12) is configured as a fastening tongue (12) for engaging in the counter-retaining portion (13) in the door operator (10), preferably by horizontally displacing the door operator (10) along the elongate extension, and in that an opposite second retaining portion (12) is configured as at least one latching hook (21), which is configured to preferably engage in at least one latching opening (22) by vertically pressing the door operator (10) against the mounting plate (11).
16. A mounting arrangement according to any of the aforementioned claims, characterized **in that**, for forming at least one retaining portion (12), the mounting plate (11) has at least one fastening link-plate (29) configured laterally with regard to the elongate extension, preferably in the shape of a wing, which is configured for a clamping

engagement in a counter-retaining portion (13) laterally provided in the door operator (10).

17. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the fastening portion (16c) forms a portion approximately rectangularly bent out of the plane of the mounting plate (11) which portion is preferably connectable to the door operator (10) by means of a screw element (23) and a clamping plate (24).
18. A mounting arrangement according to any of the aforementioned claims, **characterized in that**, by tightening the screw element (23), the fastening portion (16c) can be braced by means of the clamping plate (24) in a clamping direction against the housing (15) of the door operator (10), such that the fastening link-plates (29) are insertable in a clamping manner into the counter-retaining portions (13) which are provided in the door operator (10).
19. A mounting arrangement according to any of the aforementioned claims, **characterized in that** the mounting plate (11) has at least two retaining portions (12), which are disposed laterally with regard to the elongate extension of the mounting

plate (11) and preferably opposite to each other at the latter, wherein preferably at least one retaining portion (12) is configured as a fastening tongue (25) for engaging in a recess (26), and an approximately opposite retaining portion (12) is configured as a resiliently movable snap hook (27), which can snap in a snap opening (28) provided in the door opener (10).