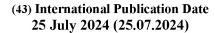
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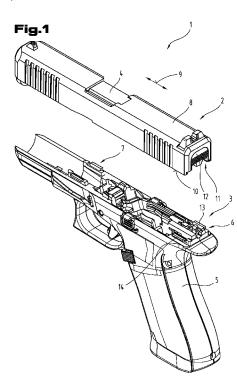
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- (71) Applicant: GLOCK TECHNOLOGY GMBH [AT/AT]; Gaston-Glock-Park 1, 9170 Ferlach (AT).
- (72) Inventors: SEVELDA, Aaron; c/o Glock Technology GmbH, Gaston-Glock-Park 1, 9170 Ferlach (AT). KARLO, Markus; c/o Glock Technology GmbH, Gaston-Glock-Park 1, 9170 Ferlach (AT). GUNSAM, Jürgen; c/o Glock Technology GmbH, Gaston-Glock-Park 1, 9170 Ferlach (AT). STERN, Thomas; c/o Glock Technology GmbH, Gaston-Glock-Park 1, 9170 Ferlach (AT). GURTNER, Clemens; c/o Glock Technology GmbH, Gaston-Glock-Park 1, 9170 Ferlach (AT).
- (74) Agent: ANWÄLTE BURGER UND PARTNER RECHTSANWALT GMBH; Rosenauerweg 16, 4580 Windischgarsten (AT).

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(57) **Abstract:** The invention relates to a slide (8) for a pistol (1), the slide (8) comprising: - a first slide groove (16) and - a second slide groove (17) for coupling the slide (8) to a frame (3); - a bore (20) for accommodating a firing pin (21); - a cover plate groove (11) for accommodating a slide cover plate (12); - a recess (25), wherein the recess (25) extends from an internal surface (19) to the bore (20) in the radial direction and from the cover plate groove (11) to a front end (26) of the recess (25) in a slide displacement direction (9), wherein the recess (25) is configured for accommodating a firing pin flag (24) of the firing pin (21). At least a first protrusion (31) is situated on the internal surface (19), wherein the first protrusion (31) is situated next to the recess (25).

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# SLIDE AND A FRAME FOR A PISTOL AND PISTOL EQUIPPED WITH THE SLIDE AND THE FRAME

The invention relates to a slide and a frame for a pistol and to a pistol equipped with the slide and/or the frame.

EP 2294351 B1 discloses a mechanism for disassembling a pistol without using the trigger. The mechanism comprises a disassembler that has a lever positioned on the outside of a handgun receiver. The disassembly mechanism further comprises a catch lever, sear catch, and a sear catch spring. The disassembler has an eccentric pin which is moved through a quarter circle by rotating the disassembly lever in such a manner that it moves the catch lever in the forward direction parallel to the plane of movement of the slide on the receiver.

The receiver can also be named as frame.

The pistol as disclosed in EP 2294351 B1 has the disadvantage that it lacks of stiffness and that it is complicated to disassemble.

The object of the present invention was to overcome the disadvantages of the prior art with respect to the disassembly mechanisms in those designs and to specify an improved slide and an improved frame for a pistol, as well as a pistol equipped with the slide and the frame.

This object is achieved by the features according to the claims.

According to the invention a slide for a pistol is designed. The slide comprises:

- a first slide groove and

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- a second slide groove for coupling the slide to a frame;
- a bore for accommodating a firing pin;
- a cover plate groove for accommodating a slide cover plate;
- a recess, wherein the recess extends from an internal surface to the bore in radial direction 25 and from the cover plate groove to a front end of the recess in a slide displacement direction, wherein the recess is configured for accommodating a firing pin flag of the firing pin, characterized in that

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at least a first protrusion is situated on the internal surface, wherein the first protrusion is situated next to the recess.

The slide according to the invention has the advantage that the protrusion gives enhanced stiffness to the slide. In addition, the design of the guide element according to the invention gives the advantage that a protection against the ingress of foreign bodies into the inside of the pistol can be enhanced. In addition, guidance of the firing pin, in particular of the firing pin flag, can be enhanced by the protrusion.

Furthermore, it may be useful if the first protrusion is situated on a first side of the recess and a second protrusion is situated on a second side of the recess. By the second protrusion, the stiffness of the slide can be enhanced even more.

Furthermore, it may be provided that the first protrusion has a first length and the second protrusion has a second length, wherein the first length is greater than the second length. This gives the advantage that the process of disassembling can be improved as the lengths of the first protrusion and the second protrusion can be adapted to the shape of the frame.

Moreover, it may be provided that the first protrusion extends from the cover plate groove to the front end of the recess in the slide displacement direction. This gives the advantage of enhanced stability of the slide throughout the whole length of the recess.

According to an advancement, it is possible that the first protrusion is at least partly routed around the front end of the recess. This gives the advantage of enhanced stability of the slide throughout the whole length of the recess.

An embodiment, according to which it may be provided that the first protrusion extends from the cover plate groove to a front end of the first protrusion, wherein the front end of the first protrusion is distanced from the front end of the recess in the slide displacement direction, is also advantageous. Such an embodiment can be adapted to the shape of the frame such that the process of disassembling can be improved.

According to a particular embodiment, it is possible that on a front end of the first protrusion, the first protrusion has a first ramp-like shape. This gives the advantage that the process of disassembling can be improved as there are no sharp edges that could collide with the frame

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or protruding components being embedded in the frame, such as e.g. an ejector or trigger housing assembly, in the process of disassembling.

According to an advantageous advancement, it may be provided that on a side distanced from the cover plate groove, the second protrusion has a second ramp-like shape. This gives the advantage that the process of disassembling can be improved as there are no sharp edges that could collide with the frame in the process of disassembling.

It is also possible that a first width of the first protrusion is greater than a second width of the second protrusion.

It is also possible that the first protrusion extends all the way to the second protrusion. The first protrusion and the second protrusion can in this case form a U-shape.

It can also be of advantage, when the first protrusion and/or the second protrusion are of variable height.

The invention is also directed to a frame for a pistol. The frame comprises:

- a frame body;

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- a guide element comprising a first guide rail and a second guide rail and a main body connecting the first guide rail and the second guide rail, wherein the guide element is accommodated as an insert in the frame body, wherein the guide element is configured to be accommodated in slide grooves of the slide in a form-fitting manner, wherein the main body of the guide element has a main body top surface, and the first guide rail has a first top surface and the second guide rail has a second top surface.

At least parts of the main body top surface are elevated to a level of the first top surface and the second top surface or higher.

The frame for a pistol according to the invention has the advantage that the frame and the guide element has improved stiffness. In addition, the design of the guide element according to the invention gives the advantage that a protection against the ingress of foreign bodies into the inside of the pistol can be enhanced.

Furthermore, it may be useful if the main body of the guide element has at least one first elevation having a main body top surface that is situated on a higher level than other sections of the main body. Such an elevation can give improved stiffness to the guide element.

Furthermore, it may be provided that the main body of the guide element has a second elevation having a main body top surface that is situated on a higher level than other sections of the main body. Such an elevation can give improved stiffness to the guide element.

Moreover, it may be provided that the main body top surface in the area of the first elevation and the main body top surface in the area of the second elevation are on an equal level. This gives the advantage of symmetrical behavior of the guide element.

According to an advancement, it is possible that in between the first elevation and the first guide rail a first depression is situated. This gives the advantage of reduced weight of the guide element. This advancement also gives the advantage of space for the firing pin.

- The invention is also directed to a pistol, comprising:
  - a frame;

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- a slide, movably coupled to the frame,

wherein the slide is designed according to one of claims 1 to 9 and/or the frame is designed according to one of claims 10 to 15.

In particular by a combination of a slide comprising the features of claim 1 with a frame comprising the features of claim 10, the pistol can have enhanced stiffness. In addition, a protection against the ingress of foreign bodies into the inside of the pistol can be enhanced.

According to an advancement, it is possible that a vertical distance of a part of the main body top surface and a first bottom surface of the first protrusion or

- a vertical distance of a part of the main body top surface and a second bottom surface of the second protrusion
  - is 0,05mm to 6mm, preferably 0,5mm to 4mm, in particular 2mm to 3mm. This gives the advantage that a protection against the ingress of foreign bodies into the inside of the pistol can be enhanced due to the narrow distance. The distance is measured in the assembled pistol.
- 25 For the purpose of better understanding of the invention, it will be elucidated in more detail by means of the figures below.

These show in a respectively very simplified schematic representation:

Fig. 1 an exploded view of a first embodiment of a pistol in a perspective view;

- Fig. 2 a first embodiment of a frame of the pistol in a perspective view;
- Fig. 3 a first embodiment of a slide of the pistol in a perspective view;
- Fig. 4 a second embodiment of a slide of the pistol in a perspective view;
- Fig. 5 a third embodiment of a slide of the pistol in a perspective view;
- 5 Fig. 6 a first embodiment of a guide element of the pistol in a perspective view;

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Fig. 7 a second embodiment of a guide element of the pistol in a perspective view.

First of all, it is to be noted that in the different embodiments described, equal parts are provided with equal reference numbers and/or equal component designations, where the disclosures contained in the entire description may be analogously transferred to equal parts with equal reference numbers and/or equal component designations. Moreover, the specifications of location, such as at the top, at the bottom, at the side, chosen in the description refer to the directly described and depicted figure and in case of a change of position, these specifications of location are to be analogously transferred to the new position.

- Fig. 1 shows in a perspective view an exploded view of a first embodiment of a pistol 1.
- As can be seen from Fig. 1, it can be provided that the pistol 1 comprises a slide assembly 2. It can also be provided that the pistol 1 comprises a frame 3. The slide assembly 2 and the frame 3 are shown spaced apart from one another in the illustration according to Fig. 1.
  - In particular, it can be provided that, in the state of use of the pistol 1, the slide assembly 2 is coupled to the frame 3. The slide assembly 2 can comprise a barrel 4.
- The frame 3 can comprise a frame body 5. The frame body 5 can serve as basis for accommodating various parts of the pistol 1.

The frame 3 can also comprise a guide element 6 which is accommodated as an insert in the frame body 5. In particular the guide element 6 can be situated in a molded frame body 5, wherein the guide element 6 is at least partially covered by the frame body 5. In other words, the guide element 6 can be enclosed in the frame body 5 in a positive locking manner.

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The frame 3 can also comprise a second guide element 7 which is accommodated as an insert in the frame body 5. In particular the second guide element 7 can be situated in a molded frame body 5, wherein the second guide element 7 is at least partially covered by the frame body 5. In other words, the second guide element 7 can be enclosed in the frame body 5 in a positive locking manner.

By use of the guide element 6 and the second guide element 7, the slide assembly 2 can be accommodated on the frame 3, wherein the slide assembly 2 and the frame 3 can be displaceable relative to each other in a slide displacement direction 9.

The position details chosen in the description, such as, for example, top, bottom, side, etc., relate to the position of the pistol 1 shown in Fig. 1. The front in this case is on the left side of Fig. 1, and thus at the muzzle of the barrel 4. A longitudinal direction extends parallel to the slide displacement direction 9. A transverse extension or transverse direction extends in the width of the pistol 1 transversely to the longitudinal direction.

The frame 3 can be placed underneath a slide bottom 10 of the slide 8.

As it can be seen in Fig. 1, a cover plate groove 11 can be positioned on a back side of the slide 8. The cover plate groove 11 serves for accommodating a slide cover plate 12. The slide cover plate 12 can be accommodated in the cover plate groove 11 in a form-locking manner.

Fig. 2 shows a perspective view of a first embodiment of the frame body 5, wherein the same reference numerals or component designations as those of the previous Fig. 1 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding Fig. 1.

In Fig. 2, the guide element 6 is shown in dashed lines in its position in the frame body 5. In addition, for easier understanding, the guide element 6 is also displayed separated from the frame body 5.

As it can be seen in Fig. 2, the guide element 6 comprises a first guide rail 13 and a second guide rail 14 and a main body 15 connecting the first guide rail 13 and the second guide rail 14. The guide element 6 can be implemented as sheet metal part. In particular, the guide element 6 can be a one-piece part.

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Fig. 3 shows a perspective view of a first embodiment of the slide 8, wherein the same reference numerals or component designations as those of the previous Fig. 1 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding Fig. 1.

In Fig. 3, the slide 8 is displayed upside down such that the slide bottom 10 is visible and only a back part of the slide 8 is displayed. The cover plate groove 11 can be extending starting from the slide bottom 10.

In the slide 8 a first slide groove 16 and a second slide groove 17 are situated. The first slide groove 16 and a second slide groove 17 are situated near the slide bottom 10. The first slide groove 16 and a second slide groove 17 are extending in the slide displacement direction 9.

The first slide groove 16 can be complementary to the first guide rail 13 in form and function. The second slide groove 17 can be complementary to the second guide rail 14 in form and function.

On the slide bottom 10 a slide recess 18 can be situated. The slide recess 18 can extend from the slide bottom 10 to an internal surface 19.

In the slide 8 a bore 20 can be situated, wherein the bore 20 can serve for accommodating a firing pin 21. The bore 20 can be extending in a slide displacement direction 9 starting from the cover plate groove 11 situated on the back side of the slide 8.

The bore 20 can be housing a spacer sleeve 22 by which the firing pin 21 can be guided. In particular the spacer sleeve 22 can be situated between the bore 20 and a shaft 23 of the firing pin 21.

The firing pin 21 can also have a firing pin flag 24. The firing pin flag 24 can be situated on the shaft 23 of the firing pin 21. The firing pin flag 24 can be extending in axial direction from the shaft 23 of the firing pin 21.

In the slide 8 a recess 25 can be situated, wherein the recess 25 serves for accommodating the firing pin flag 24. The firing pin flag 24 can be guided in the recess 25.

The recess 25 extends from the internal surface 19 to the bore 20 in radial direction. In other words, the recess 25 opens the bore 20 into the internal surface 19.

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The recess 25 extends from the cover plate groove 11 to a front end 26 of the recess 25 in the slide displacement direction 9.

The recess 25 can have a length 27 from the cover plate groove 11 to a front end 26 of the recess 25. The recess 25 can have a width 28 from a first side 29 of the recess 25 to a second side 30 of the recess 25.

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A first protrusion 31 can be situated on the internal surface 19 on the first side 29 of the recess 25. The first protrusion 31 can be extending from the internal surface 19 of the slide 8 towards the slide bottom 10. The first protrusion 31 can have a first bottom surface 32, which can be distanced in a first height 33 from the internal surface 19. The first protrusion 31 can extend from the cover plate groove 11 to a front end 34 of the first protrusion 31 in a first length 35. The first length 35 of the first protrusion 31 can be extending in slide displacement direction 9. The front end 34 of the first protrusion 31 can be distanced from the front end 26 of the recess 25 in the slide displacement direction 9. In other words, the first length 35 of the first protrusion 31 can be shorter than the length 27 of the recess 25. On the front end 34 of the first protrusion 31, the first protrusion 31 can have a first ramp-like shape. The first protrusion 31 can have a first width 41.

A second protrusion 36 can be situated on the internal surface 19 on second side 30 of the recess 25. The second protrusion 36 can be extending from the internal surface 19 of the slide 8 towards the slide bottom 10. The second protrusion 36 can have a second bottom surface 37, which can be distanced in a second height 38 from the internal surface 19. The second protrusion 36 can extend from the cover plate groove 11 to a front end 40 of the second protrusion 36 in a second length 39. The second length 39 of the second protrusion 36 can be extending in slide displacement direction 9. The second protrusion 36 can start from the cover plate groove 11. The front end 40 of the second protrusion 36 can be distanced from the front end 26 of the recess 25 in the slide displacement direction 9. In other words, the second length 39 of the second protrusion 36 can be shorter than the length 27 of the recess 25. On a front end 40 of the second protrusion 36, the second protrusion 36 can have a second ramp-like shape. The second protrusion 36 can have a second width 42.

In the first embodiment of the slide 8 according to Fig. 3, the first length 35 of the first protrusion 31 is greater than the second length 39 of the second protrusion 36.

Fig. 4 shows a perspective view of a second embodiment of the slide 8, wherein the same reference numerals or component designations as those of the previous figures 1 to 3 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding figures 1 to 3.

As it can be seen in Fig. 4, it is possible that the first protrusion 31 extends from the cover plate groove 11 to the front end 26 of the recess 25 in the slide displacement direction 9. The first protrusion 31 can even be routed around the front end 26 of the recess 25 and extend to the second side 30 of the recess 25.

It is also possible that the first protrusion 31 extends all the way to the second protrusion 36.

The first protrusion 31 and the second protrusion 36 can in this case be U-shaped.

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Fig. 5 shows a perspective view of a third embodiment of the slide 8, wherein the same reference numerals or component designations as those of the previous figures 1 to 4 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding figures 1 to 4.

As it can be seen in Fig. 5, it is possible that the first protrusion 31 and the second protrusion 36 are symmetrical. The front end 34 of the first protrusion 31 can have a stepped edge.

Fig. 6 shows a perspective view of a first embodiment of the guide element 6, wherein the same reference numerals or component designations as those of the previous figures 1 to 2 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding figures 1 to 2.

As it can be seen in Fig. 6, the guide element 6 can be in the shape of an U having the main body 15 as base and a first leg 43 situated on a first side 44 of the main body 15 and a second leg 45 situated on a second side 46 of the main body 15.

The first guide rail 13 of the guide element 6 can be located on the first leg 43 of the guide element 6. The first guide rail 13 of the guide element 6 can be embodied as a 90 degree bend on the first leg 43 of the guide element 6. The first guide rail 13 has a first top surface 47.

The second guide rail 14 of the guide element 6 can be located on the second leg 45 of the guide element 6. The second guide rail 14 of the guide element 6 can be embodied as a 90

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degree bend on the second leg 45 of the guide element 6. The second guide rail 14 has a second top surface 48.

The first guide rail 13 and the second guide rail 14 can be oriented in opposite direction to each other.

5 The main body 15 connecting the first guide rail 13 and the second guide rail 14 has a main body top surface 49.

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In the embodiment of Fig. 6, the main body 15 comprises a first elevation 50 and a second elevation 51. The first elevation 50 and a second elevation 51 represent parts of the main body top surface 49. These parts of the main body top surface 49 are elevated to a level of the first top surface 47 and the second top surface 48.

In another embodiment, which is not displayed, the parts of the main body top surface 49 can be elevated to a level higher than the first top surface 47 and the second top surface 48.

As it can be seen in Fig. 6, in between the first elevation 50 and the first guide rail 13, a first depression 52 can be situated. In between the second elevation 51 and the second guide rail 14, a second depression 53 can be situated.

In between the first elevation 50 and the second elevation 51, a middle depression 54 can be situated.

Fig. 7 shows a perspective view of a second embodiment of the guide element 6, wherein the same reference numerals or component designations as those of the previous figures 1 to 6 are used here again for the same parts. In order to avoid unnecessary repetition, reference is made to the detailed description in the preceding figures 1 to 6.

As it can be seen in Fig. 7, the first depression 52 and the second depression 53 can be very shallow.

The exemplary embodiments show possible embodiment variants, and it should be noted in this respect that the invention is not restricted to these particular illustrated embodiment variants of it, but that rather also various combinations of the individual embodiment variants are possible and that this possibility of variation owing to the teaching for technical action

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provided by the present invention lies within the ability of the person skilled in the art in this technical field.

The scope of protection is determined by the claims. However, the description and the drawings are to be adduced for construing the claims. Individual features or feature combinations from the different exemplary embodiments shown and described may represent independent inventive solutions. The object underlying the independent inventive solutions may be gathered from the description.

All indications regarding ranges of values in the present description are to be understood such that these also comprise random and all partial ranges from it, for example, the indication 1 to 10 is to be understood such that it comprises all partial ranges based on the lower limit 1 and the upper limit 10, i.e. all partial ranges start with a lower limit of 1 or larger and end with an upper limit of 10 or less, for example 1 through 1.7, or 3.2 through 8.1, or 5.5 through 10.

Finally, as a matter of form, it should be noted that for ease of understanding of the structure, elements are partially not depicted to scale and/or are enlarged and/or are reduced in size.

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#### List of reference signs

1	pistol
2	slide assembly
3	frame
4	barrel
5	frame body
6	guide element
7	second guide element
8	slide
9	slide displacement direction
10	slide bottom
11	cover plate groove
12	slide cover plate
13	first guide rail
14	second guide rail
15	main body
16	first slide groove
17	second slide groove
18	slide recess
19	internal surface
20	bore
21	firing pin
22	spacer sleeve
23	shaft of firing pin
24	firing pin flag
25	recess
26	front end of the recess
27	length of recess
28	width of recess
29	first side of recess
30	second side of recess
31	first protrusion

32 first bottom surface 33 first height 34 front end of the first protrusion 35 first length 36 second protrusion 37 second bottom surface 38 second height 39 second length 40 front end of the second protrusion 41 first width of first protrusion 42 second width of second protrusion 43 first leg 44 first side 45 second leg 46 second side 47 first top surface 48 second top surface 49 main body top surface 50 first elevation 51 second elevation 52 first depression 53 second depression

54 middle depression

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#### Claims

- 1. A slide (8) for a pistol (1), the slide (8) comprising:
- a first slide groove (16) and
- 5 a second slide groove (17) for coupling the slide (8) to a frame (3);
  - a bore (20) for accommodating a firing pin (21);
  - a cover plate groove (11) for accommodating a slide cover plate (12);
  - a recess (25), wherein the recess (25) extends from an internal surface (19) to the bore (20) in radial direction and from the cover plate groove (11) to a front end (26) of the recess (25) in a slide displacement direction (9), wherein the recess (25) is configured for accommodating a firing pin flag (24) of the firing pin (21),

characterized in that

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at least a first protrusion (31) is situated on the internal surface (19), wherein the first protrusion (31) is situated next to the recess (25).

- The slide (8) for a pistol (1) according to claim 1, characterized in that the first protrusion (31) is situated on a first side (29) of the recess (25) and a second protrusion (36) is situated on a second side (30) of the recess (25).
  - 3. The slide (8) for a pistol (1) according to claim 2, characterized in that the first protrusion (31) has a first length (35) and the second protrusion (36) has a second length (39), wherein the first length (35) is greater than the second length (39).
  - 4. The slide (8) for a pistol (1) according to one of the claims 1 to 3, characterized in that in the slide displacement direction (9), the first protrusion (31) extends to the cover plate groove (11).
- 5. The slide (8) for a pistol (1) according to one of the claims 1 to 4, characterized in that the first protrusion (31) extends from the cover plate groove (11) to the front end (26) of the recess (25) in the slide displacement direction (9).
  - 6. The slide (8) for a pistol (1) according to one of the claims 1 to 5, characterized in that the first protrusion (31) is at least partly routed around the front end (26) of the recess (25).
- 7. The slide (8) for a pistol (1) according to one of the claims 1 to 4, characterized in that the first protrusion (31) extends from the cover plate groove (11) to a front end (34) of the

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first protrusion (31), wherein the front end (34) of the first protrusion (31) is distanced from the front end (26) of the recess (25) in the slide displacement direction (9).

- 8. The slide (8) for a pistol (1) according to one of the preceding claims, characterized in that on the front end (34) of the first protrusion (31), the first protrusion (31) has a first ramplike shape.
- 9. The slide (8) for a pistol (1) according to one of the claims 2 to 8, characterized in that on a front end (40) of the second protrusion (36), the second protrusion (36) has a second ramp-like shape.
- 10. A frame (3) for a pistol (1), the frame (3) comprising:
- 10 a frame body (5);

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- a guide element (6) comprising a first guide rail (13) and a second guide rail (14) and a main body (15) connecting the first guide rail (13) and the second guide rail (14), wherein the guide element (6) is accommodated as an insert in the frame body (5), wherein the guide element (6) is configured to be accommodated in slide grooves (16, 17) of the slide (8) in a form-fitting manner, wherein the main body (15) of the guide element (6) has a main body top surface (49), and the first guide rail (13) has a first top surface (47) and the second guide rail (14) has a second top surface (48),

characterized in that

- at least parts of the main body top surface (49) are elevated to a level of the first top surface (47) and the second top surface (48) or higher.
- 11. The frame (3) for a pistol (1) according to claim 10, characterized in that the main body (15) of the guide element (6) has at least one first elevation (50) having a main body top surface (49) that is situated on a higher level than other sections of the main body (15).
- 12. The frame (3) for a pistol (1) according to claim 11, characterized in that the main body of the guide element (6) has a second elevation (51) having a main body top surface (49) that is situated on a higher level than other sections of the main body (15).
  - 13. The frame (3) for a pistol (1) according to claim 12, characterized in that the main body top surface (49) in the area of the first elevation (50) and the main body top surface (49) in the area of the second elevation (51) are on an equal level.

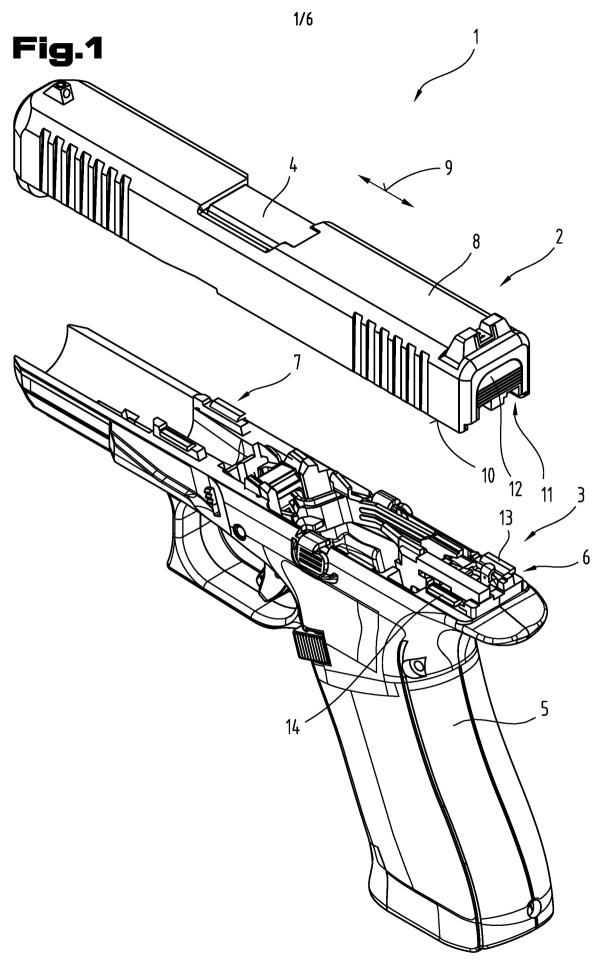
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- 14. The frame (3) for a pistol (1) according to one of claims 11 to 13, characterized in that in between the first elevation (50) and the first guide rail (13) a first depression (52) is situated.
- 15. A pistol (1), comprising:
- 5 a frame (3);
  - a slide (8), movably coupled to the frame (3),

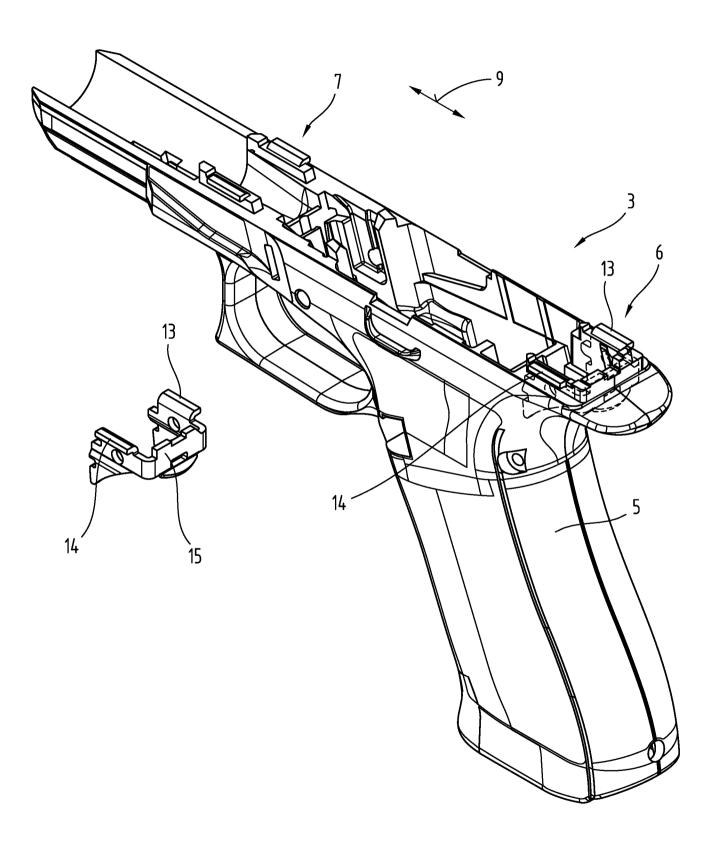
characterized in that

the slide (8) is designed according to one of claims 1 to 9 and/or the frame (3) is designed according to one of claims 10 to 15.

- 16. The pistol (1) according to claim 15, characterized in that a vertical distance of a part of the main body top surface (49) and a first bottom surface (32) of the first protrusion (31) or a vertical distance of a part of the main body top surface (49) and a second bottom surface (37) of the second protrusion (36)
- is 0,05mm to 6mm, preferably 0,5mm to 4mm, in particular 2mm to 3mm.

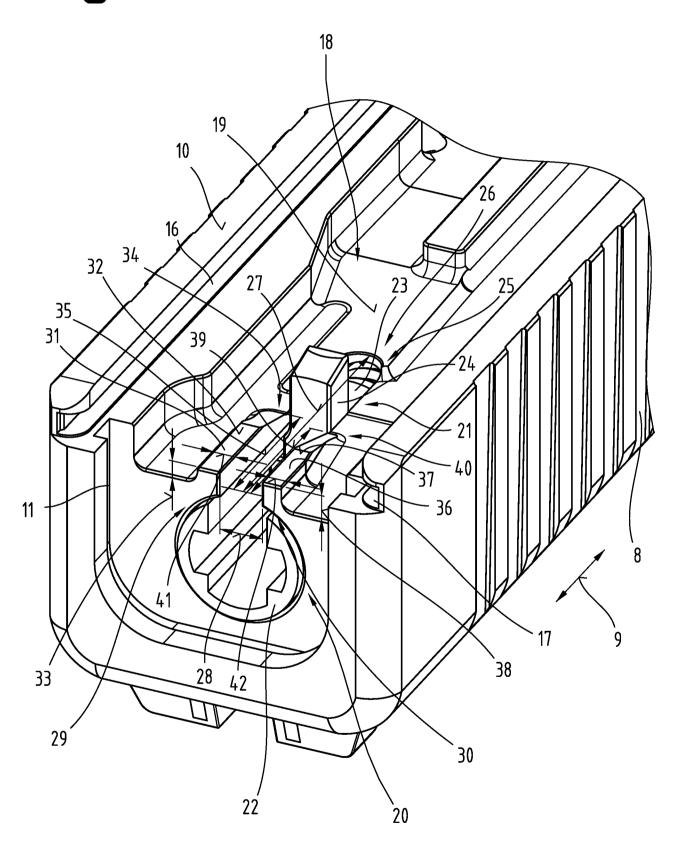






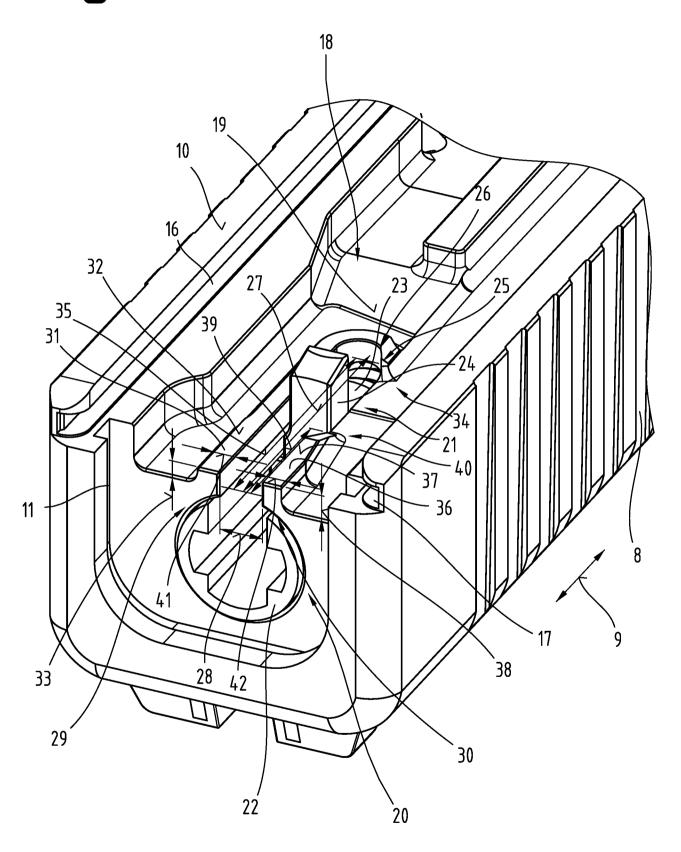
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### Fig.3



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## Fig.4



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### Fig.5

