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(54) **Handle and a locking clip for use with a screen device, and screen device equipped therewith**

(57) A handle (17) for a movable operating profile of a screen device (1) guided slidably in horizontal direction. The handle is provided with a base part having a first surface to abut in mounted condition against an outer surface of the operating profile. Retaining means are associated with the first surface for attaching the handle to the operating profile. A recess in the first surface has as a purpose to allow a locking clip to be received therein. The handle can be used both independently and in combination with a locking clip (19). In combination with the locking clip, the locking clip is received in the recess. The handle is preferably to be combined with a screen device provided with a pleated screen of screen gauze (3). The pleated screen gauze is arranged in a foldably and extendably guided manner between a fixed post (5) extending in vertical direction and a movable operating profile (7). The movable operating profile is vertical and parallel to the fixed post and arranged to be moved, in a manner guided slidably in horizontal direction, between a closed and an opened condition.

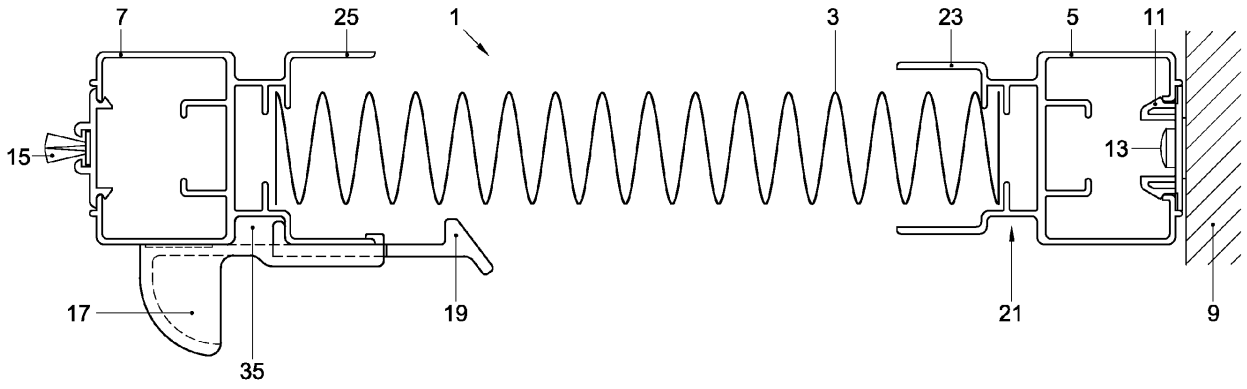


Fig. 1

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## Description

**[0001]** The invention relates to a handle and a locking clip for use with a screen device.

**[0002]** It is known to provide screen devices of the horizontally sliding pleated type with a handle, which cooperates with a movable operating profile extending in vertical direction, to simplify opening and closing of the screen device. Especially with screen devices of the pleated type, often, also a locking clip is arranged, to prevent the operating profile from springing back from the opened condition under the influence of the inherent resilience of the pleated screen gauze. The handle and the locking clip are each separately arranged on the operating profile. This not only gives a cluttered impression, but also increases the risk of each of these parts coming loose easily. There is a need for the functions of handle and locking clip to be so combined that use of the locking clip remains optional, but that the locking clip if applied can be arranged simply and inconspicuously.

**[0003]** Accordingly, it is an object of the present invention to eliminate at least one of the disadvantages of the state of the art or reduce the consequences thereof. It is also an object of the present invention to provide improved, or alternative solutions that can be carried out more simply and that moreover can be made comparatively inexpensively. Alternatively, it is an object of the invention to provide to the public an at least useful option.

**[0004]** To this end, the invention provides a handle for a movable operating profile of a screen device guided slidably in horizontal direction, according to one or more of the appended claims. With advantage, the handle is provided with a base part having a first surface to abut in mounted condition against an outer surface of the operating profile. Also, retaining means may be associated with the first surface for attaching the handle to the operating profile. A recess in the first surface has as a purpose to allow a locking clip to be received therein. Such a handle can be used both independently and in combination with a locking clip. In such combination with the locking clip, the locking clip is received in the recess in a suitable manner. The invention also relates to the combination of the handle and a screen device provided with a pleated screen of screen gauze, according to one or more of the appended claims. In such a combination, the pleated screen gauze is arranged in a foldably and extendably guided manner between a fixed post extending in vertical direction and a movable operating profile. The movable operating profile is vertical and parallel to the fixed post and arranged to be moved, guided slidably in horizontal direction, between a closed and an opened condition.

**[0005]** Further advantages and features of the invention are set out in the following description of an exemplary embodiment shown in the accompanying drawing figures, wherein:

Fig. 1 is a top plan view of a pleated screen device according to the invention, in partly extended condition;

Fig. 2 is a top plan view of the pleated screen device of Fig. 1, but shown in retracted condition;

Fig. 3A is a front elevational view of a handle for the screen device according to the invention;

Fig. 3B is a side elevational view of the handle of Fig. 3A;

Fig. 3C is a top plan view of the handle of Fig. 3A;

Fig. 4A is a front elevational view of a locking clip for the screen device according to the invention;

Fig. 4B is a side elevational view of the locking clip of Fig. 4A;

Fig. 4C is a top plan view of the locking clip of Fig. 4A;

Fig. 5A is a partial front elevational view of the handle of Fig. 3A and the locking clip of Fig. 4A in mounted condition on a movable profile of a screen device according to the invention;

Fig. 5B is a partial side elevational view of the movable profile with handle and locking clip of Fig. 5A; and

Fig. 5C is a top plan view of the assembly according to Fig. 5A.

**[0006]** In the top plan view according to Fig. 1, there is shown a pleated screen device 1. The screen device 1 includes, as far as relevant to the invention, a pleated screen of screen gauze 3, which is arranged between a fixed post 5 and a movable profile 7. The fixed post 5 may be attached to a wall part 9 of a building or a house, or a casing arranged therein. Such attachment may be implemented as a mounting strip 11 which is secured to the wall part 9 with screws 13. The fixed post 5 is clicked onto the mounting strip 11 through a snap connection. The movable profile 7 may be guided in its movement to and from the fixed post 5 by means that are not depicted but are in themselves conventional. Such pleated screen devices, and moving and guide systems suitable therefor, are generally known from the patent publications NL 6508988, EP 0 093 827, EP 0 311 304, EP 1 447 517, and EP 1 333 148. The movable profile 7 is preferably further provided with a brush profile 15 for insect repellent sealing against an opposite wall part or casing.

**[0007]** Further, it can be seen in Fig. 1 that the movable profile 7 is provided with a handle 17 and a locking clip 19. The handle 17 serves for moving the movable profile 7 by hand between an opened and a closed position of the screen device 1. The locking clip 19 has as a purpose, in particular, to hold the screen device 1 in the opened state, which is shown in Fig. 2. Due to an inherent resilience of the pleated screen gauze 3, this tends to push the movable profile 7 away from the fixed post 5. The locking clip 19 engages resiliently in a groove 21 of the fixed post 5 and thereby ensures that the pleated screen gauze 3 in opened condition remains locked between mutually overlapping longitudinal flanges 23, 25 of the fixed post 5 and the movable profile 7, respectively.

**[0008]** For a more detailed description of the mutually

cooperating handle 17 and locking clip 19, reference is made to Figs. 3A-3C and 4A-4C. The handle 17 is shown in front, side and top plan views in Figs. 3A-3C. The locking clip 19 is shown in front, side and top plan views in Figs. 4A-4C, respectively. The handle 17 is provided with a substantially flat base 27, on which a cup grip 29 is formed. On one side of the base 27, opposite the cup grip 29, projections 31 and 33 are arranged to position the handle 17 with respect to a longitudinal groove 35 of the movable profile 7. At a longitudinal end of the flat base 27 are first and second edge hooks 37, 39. The first and second edge hooks 37, 39 are arranged to embrace a longitudinal edge of one of the longitudinal flanges 25 of the movable profile 7.

**[0009]** Further, the flat base 27, on the side remote from the cup grip 29, is provided with a recess 41. The recess 41 includes parallel first and second side edges 43, 45 which are implemented as a dovetail-shaped undercut. The dovetail shape makes an angle $\alpha$, of preferably 45° with the plane of the flat base 27. The bottom of the recess 41 has a width S of preferably a few centimeters.

**[0010]** The locking clip 19, as can be seen in Figs. 4A-4C, also has a substantially flat base part 47. This flat base part 47 is provided at one end with a hook part 49 for engaging in the groove 21 of the fixed post 5 (see Fig. 2). At an opposite end, the flat base part 47 is provided with a flanged edge 51 extending at right angles thereto. The flanged edge 51 is arranged to extend in the longitudinal groove 35 of the movable profile 7. The base part 47 is further provided with dovetailed undercut longitudinal edges 53 and 55, which are parallel to each other and to one side are bounded by respective stop ends 57, 59. The parallel longitudinal edges 53, 55 define a mutual distance T and make an angle $\beta$ with the plane of the base part 47. The distance T and the angle $\beta$ are so dimensioned with respect to the width S and the angle $\alpha$ as to allow the locking clip 19 to be slid up to the stop ends 57, 59 in the recess 41 of the handle 17, as can be seen in detail in Figs. 5A-5C. The locking clip 19 may further be provided with a grip part 61 to help release of the locking clip 19.

**[0011]** In Figs. 5A-5C there is shown in various views how the handle 17 and the locking clip 19 are attached to the movable profile 7 of the screen device 1. After the locking clip 19 has been slid into the recess 41 of the handle 17, the whole entity is hooked by the edge hooks 37, 39 over the free end of a longitudinal edge 25 of the movable profile 7 and clicked by the projections 31, 33 and the flanged edge 51 into the longitudinal groove 35. Also, through this attachment, the locking clip 19, which has been slid by its parallel dovetail longitudinal edges 53, 55 between the parallel side edges of the recess, is restrained by the flanged edge 51 from becoming detached. The stop ends 57, 59 then ensure that the locking clip also cannot be slid farther into the recess 41 than is predetermined.

**[0012]** With this construction, it is also possible to mount the handle 7 alone, without the presence of a locking clip 19, to the movable profile 7. The fact is that the presence, or the absence, of the locking clip 19 in the recess 41 has no influence on the cooperation of the edge hooks 37, 39 and the projections 31, 33 with the longitudinal flange 25 and the longitudinal groove 35, respectively, of the movable profile 7.

**[0013]** Further, the cup grip 29 is preferably so positioned with respect to the movable profile 7 and the hook part 49 that in moving the movable profile 7 with the handle in a direction away from the fixed post 5, a turning moment is applied to it. Through this turning moment exerted on the movable profile, the hook part 49 is, as it were, of itself released from the groove 21 of the fixed post 5. The room to move necessary for this is normally available in the usual moving and guide systems for this type of screen device.

**[0014]** It is believed that the construction and the operation of the invention are clearly apparent from the preceding description. The invention is not limited to any embodiment described herein and, within the ability of one skilled in the art, modifications are possible that are understood to be within the scope of the protection. Also, all kinematic inversions are understood to be within the scope of protection of the present invention. Terms such as "consisting of", when used in this description or the appended claims, should not be construed as an exhaustive enumeration, but rather in an inclusive sense. Terms such as: "means for ..." should be read as: "component formed for..." or "element constructed to"..., and are to be construed to include all equivalents for the constructions described. The use of terms such as: "critical", "advantageous", "desired", etc., is not intended to limit the invention. Furthermore, also properties that are not specifically or expressly described or required may be included in the construction according to the present invention without departing from the scope of protection.

## Claims

1. A handle for a movable operating profile extending in vertical direction of a screen device guided slidably in horizontal direction, the handle being provided with:

   a base part having a first surface to abut in mounted condition against an outer surface of the operating profile;
   retaining means associated with the first surface for attaching the handle to the operating profile; and
   a recess in the first surface to allow a locking clip to be received therein.

2. A handle according to claim 1, wherein the base part is provided with a second surface remote from the first surface and wherein a cup grip is provided on

the second surface.

3. A handle according to claim 1 or 2, wherein the retaining means are provided with at least one projection for cooperation with a longitudinal groove in the operating profile and at least one edge hook for gripping a longitudinal flange of the operating profile.

4. A handle according to any one of claims 1, 2, or 3, wherein the recess is provided with a dovetail shape by first and second side edges placed at an angle.

5. A handle according to any one of the preceding claims, in combination with a locking clip, which is received in the recess and which is provided with a flanged edge for cooperation with a longitudinal groove in the operating profile.

6. A handle according to claim 5, wherein the locking clip is provided with dovetail-shaped longitudinal edges for cooperation with the first and second side edges of the recess of the handle according to claim 4.

7. A handle according to claim 5 or 6, wherein at least one of the recess and the locking clip is provided with stop means for defining a predetermined position of the locking clip with respect to the handle.

8. A handle according to claim 5, 6 or 7, wherein the locking clip at a free end is provided with a hook part.

9. A handle according to any one of the preceding claims in combination with a screen device provided with a pleated screen of screen gauze, which is arranged in a foldably and extendably guided manner between a fixed post extending in vertical direction and a movable operating profile vertical and parallel to the fixed post and arranged to be moved in a manner guided slidably in horizontal direction between a closed and an opened condition of the screen device.

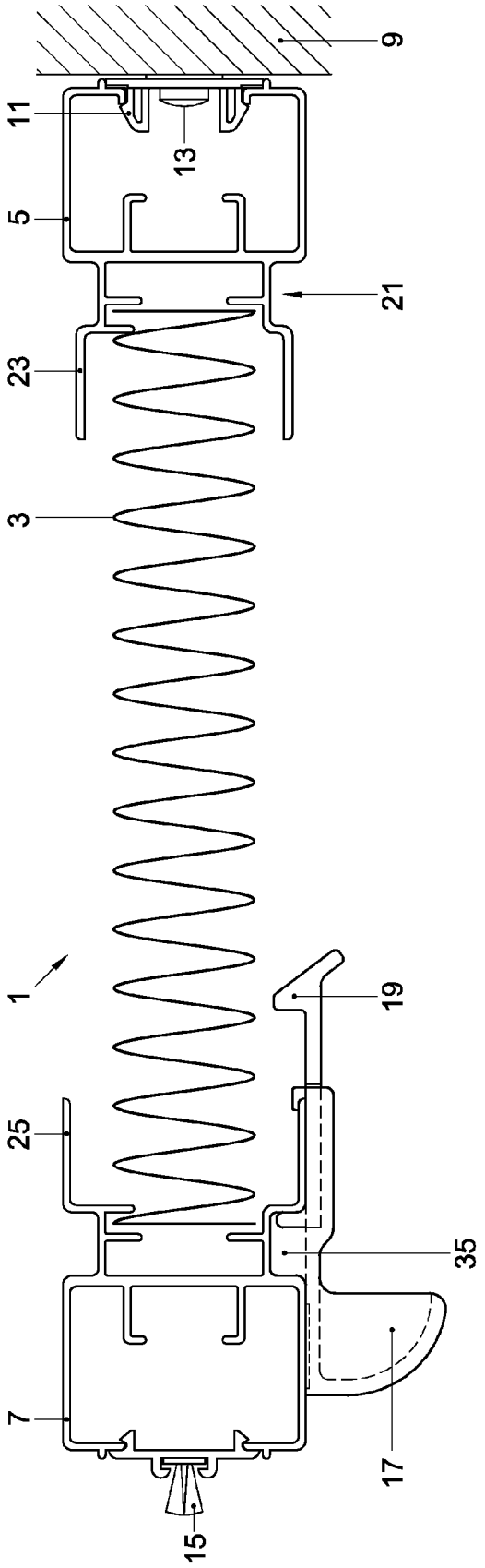


Fig. 1

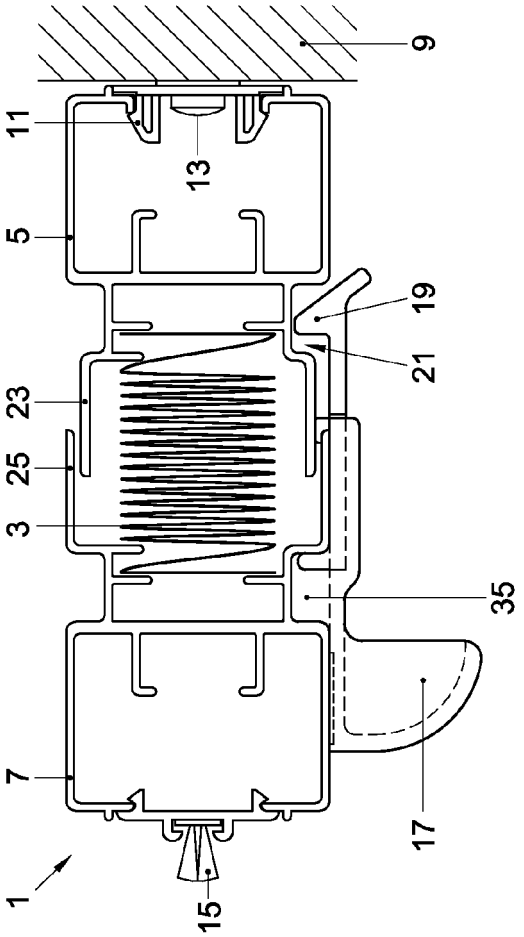


Fig. 2

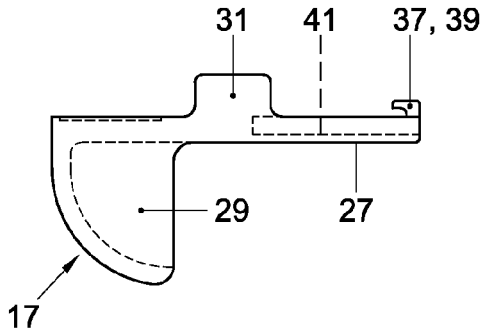


Fig. 3C

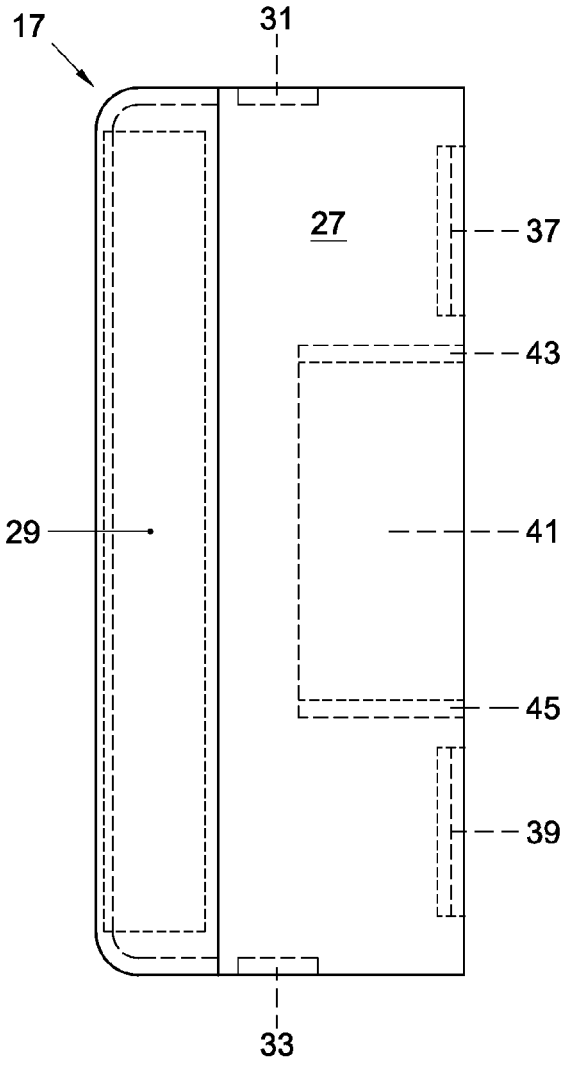


Fig. 3A

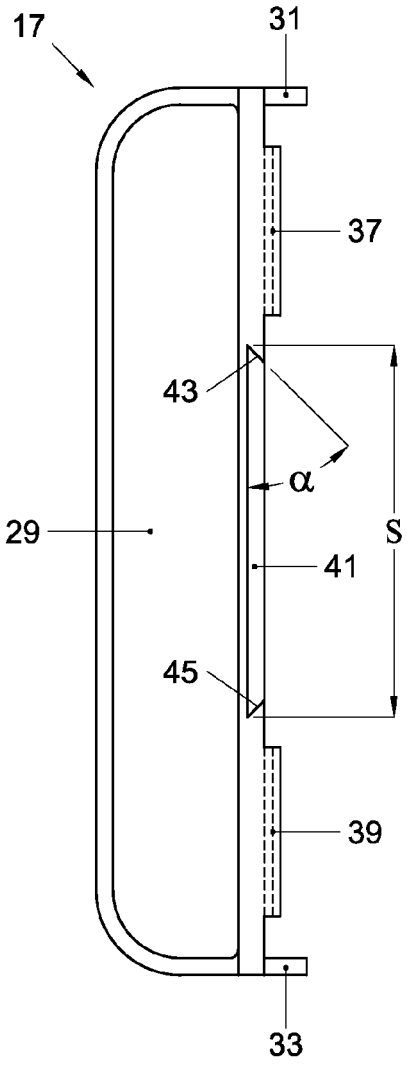


Fig. 3B

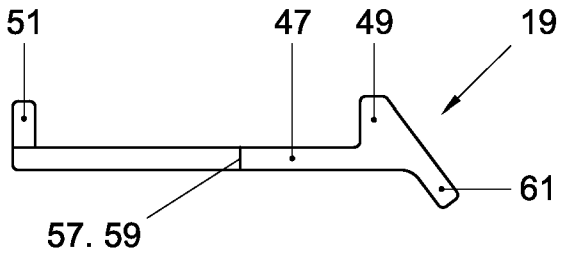


Fig. 4C

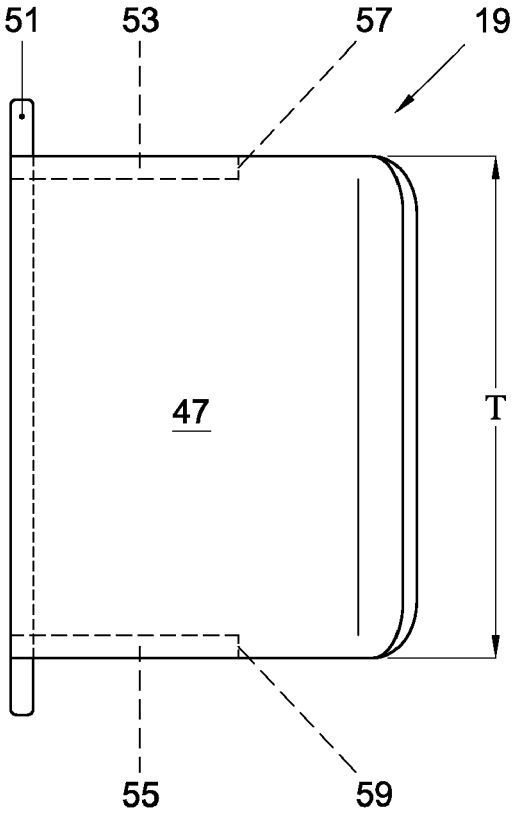


Fig. 4A

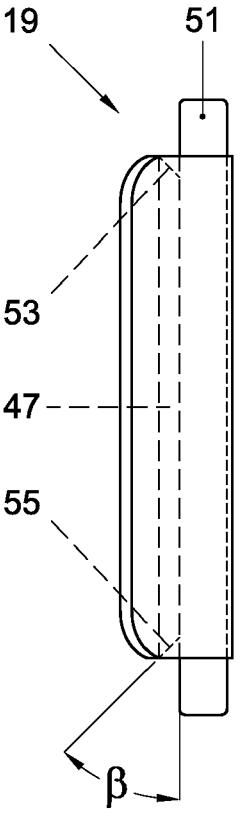


Fig. 4B

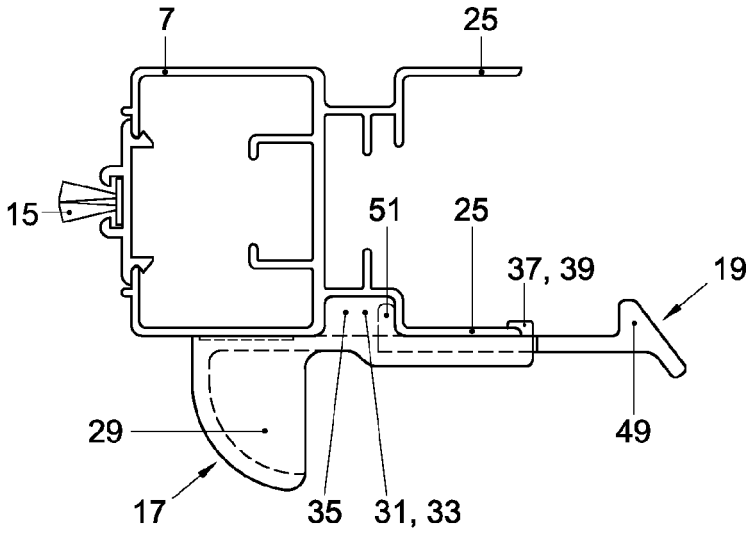


Fig. 5C

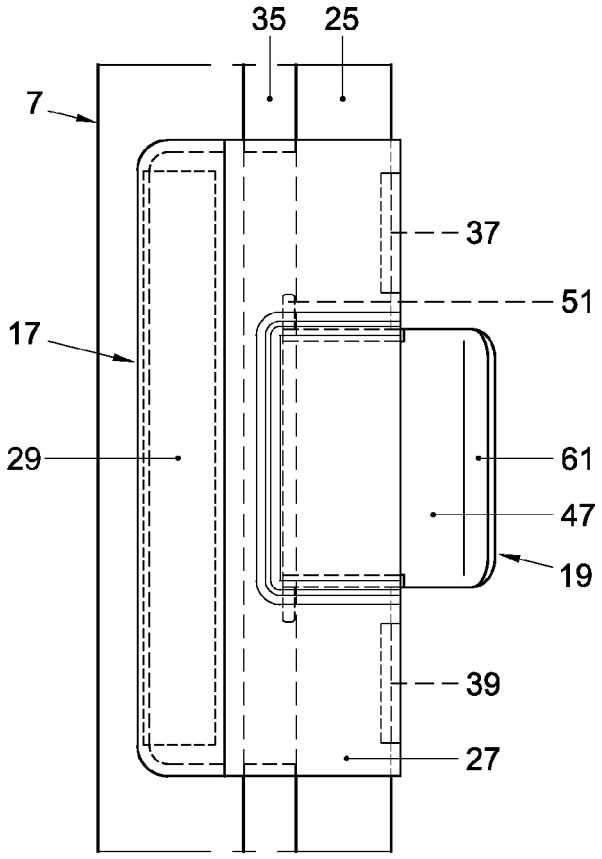


Fig. 5A

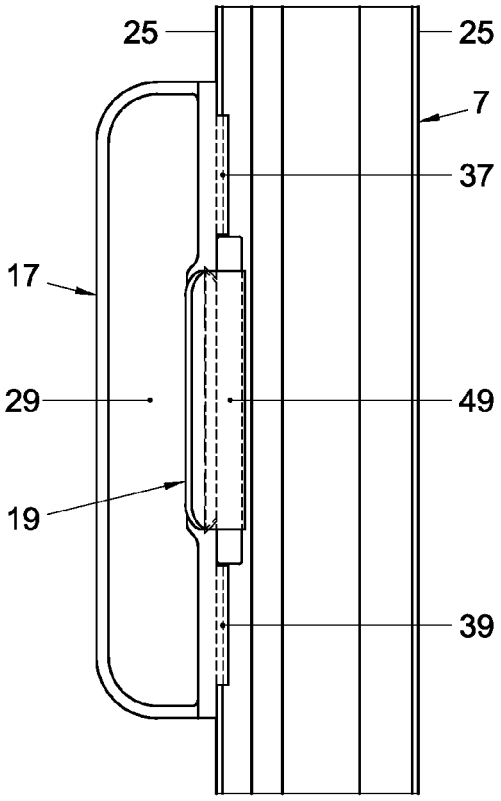


Fig. 5B

## REFERENCES CITED IN THE DESCRIPTION

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### Patent documents cited in the description


- NL 6508988 **[0006]**
- EP 0093827 A **[0006]**
- EP 0311304 A **[0006]**
- EP 1447517 A **[0006]**
- EP 1333148 A **[0006]**