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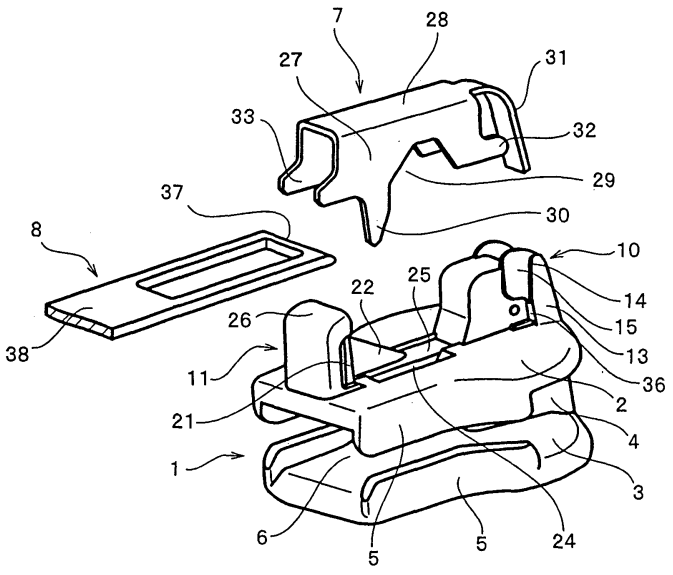
(54) **Slide fastener slider with automatic locking device**

(57) The invention provides a slide fastener slider with an automatic locking device comprising: a body (1), a cover (7) and a pull-tab (8); front and rear attaching post (11) provided in front and back of a pawl hole (24) in the body (1); the cover (7) having front engaged portions (32) at a front side, rear engaged portions (33) at a rear side and an elastic piece (31) at a front end; a locking pawl (30) provided at a rear end of at least one of openings (29) in side walls (27); the front attaching post (10) having expanded portions (13) on its side faces; an accommodating portion (16) provided below the hook piece (15) by providing a hook piece (15) in a portion from a vertex to a center at the rear end of each of the expanded portions (13); a guide portion (14) provided between the expanded portion (13) and the hook piece (15); and a pivot shaft (37) of a pull-tab (7) fitted in the openings (29) so that the front engaged portions (32) are guided into the accommodating portions (16) and fitted thereto to attach the cover (7), by which a user can assemble the slider freely using his or her desired pull-tab later.

FIG. 1



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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a slider for use in a slide fastener with an automatic locking device, and more particularly, to a slide fastener slider with an automatic locking device, which can exert its lock function when a cover having a locking pawl is actuated by pulling a pull-tab.

2. Description of the Related Art

[0002] Conventionally, the following slide fastener slider with an automatic locking device has been well known as described in US patent No. 2657445. In a cover 107 to be constructed between cover attaching posts erected at front and rear positions of its slider body, as shown in a development view of FIG. 11, an elastic piece 131 to be fixed to the front face of the front attaching post is provided projectingly, and engagement pieces 150 which can be attached to the front attaching post swingably are provided below a proximal portion of the elastic piece 131. Engagement pieces 150 to be attached to the rear attaching post swingably are provided on the other end, that is, at the rear end of the cover 107. Then, locking pawls 130 are provided on the right and left proximal portions of these engagement pieces 150 such that the locking pawls 130 are shifted to each other and projected outward. A pressing portion 153 capable of pressing the top surface of a fastener element is formed by forming the proximal portion of one locking pawl 130 wide, and the right and left locking pawls 130 are inserted into pawl holes provided in both sides of the attaching post provided at the rear position of the body. A concave shaft insertion portion 152 which allows a pivot shaft of a pull-tab to pass through is provided in the proximal portion of the locking pawl 130 and the pressing portion 153, and this material is bent as shown in FIG. 12 to form a cover 107 and the pivot shaft of the pull-tab is mounted therein. The rear end of the cover 107 is raised by pulling up the pull-tab to release the right and left locking pawls 130 from fastener elements arranged in front and back thereof, so that the slider can slide in the back and forth direction.

[0003] Another slide fastener slider with an automatic locking device has been well known as described in US patent No. 3267544. In the slider 251, as shown in FIG. 13, locking pawls 230 which can be inserted into between front and rear linear fastener elements are provided on right and left side walls of a cover 207 attached to a slider body swingably, and the locking pawls 230 are inserted into pawl holes 224 provided on the right and left sides of the body. Engagement pieces 250 provided on the front end of the cover 207 are inserted into and engaged with the right and left hook-shaped attaching posts 210 erected at the front position of the body. In addition, an elastic piece 231 provided projectingly in the center of a front end of the cover 207 is fixed to the front face of a supporting portion 212 between the attaching posts 210 to form the rear end of the cover 207 so as to be swingable vertically. The engagement pieces 250 provided at the right and left portions at the rear end of the cover 207 are swingably attached to a hook-like attaching post 211 provided at the rear position of the body. A pivot shaft 237 of a pull-tab 208 is inserted into an opening portion 229 provided in a proximal portion of the locking pawl 230 of the cover 207. Consequently, the slider 251 can be slid in the back and forth direction by constructing the cover 207 to be capable of sliding freely by operating the pull-tab 208.

[0004] The slider for a slide fastener with an automatic locking device shown in FIGS. 11 to 13 is not of a type in which the pull-tab can be attached to the slider body freely later. Even if it is intended to attach a new pull-tab at the time of late attaching operation, it is difficult to assemble the slider without use of a special device or tool because no mechanism for guiding the cover to the body is provided. In recent years, there often occur cases where a user prepares his own pull-tab in advance and assembles a slider using this pull-tab to use the slider as an accessory. However, it is a difficult configuration for an individual user to assemble the slider, and there is another problem that the user cannot assemble the slider easily.

[0005] The present invention has been accomplished in views of the above problems, and a main object of the invention is to provide a slide fastener slider with an automatic locking device, which allows a user to attach his or her desired pull-tab easily later to use the slider as an accessory, and in which a cover has a locking pawl formed integrally therewith and is attached to a front attaching post provided on the body such that the cover can exert its springiness and is attached to a rear attaching post such that the cover is movable within the rear attaching post, the slider being assembled simply and easily without a necessity of changing a conventional slider manufacturing apparatus.

[0006] Another object is to provide a slide fastener slider with an automatic locking device, which can be assembled easily in such a manner that the cover of the slider having late attachable pull-tab can be attached by using guide faces provided on the front attaching post erected on the body, so that the user can attach his or her desired pull-tab freely after purchase.

[0007] Further object is to provide a slide fastener slider with an automatic locking device, which can be assembled in such a manner that the cover of the slider attachable by the user after purchase can be attached by using hook pieces provided on the front attaching post erected on the body, so that the user can attach his or her desired pull-tab freely after purchase.

[0008] Further object is to provide a slide fastener slider with an automatic locking device, wherein the cover

of the slider, in which the pull-tab is attachable later, can be attached and assembled to the front attaching post erected on the body in a stable configuration.

[0009] Further object is to provide a slide fastener slider with an automatic locking device, in which front an engaged portion provided on the cover of the slider, in which the pull-tab is attachable later, can be guided accurately to the front attaching post and accommodated into an accommodating portion in a stable configuration.

[0010] Further object is to provide a slide fastener slider with an automatic locking device, in which it is formed into a configuration so that the cover of the slider, in which the pull-tab is attachable later, can be guided to an expanded portion provided on the attaching post erected on the body smoothly and easily so as to facilitate an operation of attaching the cover.

SUMMARY OF THE INVENTION

[0011] The above-described object is achieved by a slide fastener slider with an automatic locking device being characterized in that a pawl hole is provided in a body; front and rear attaching posts are erected in front of and back of the pawl hole; a cover comprises front engaged portions which engage the front attaching post and rear engaged portions which are movable within the rear attaching post; an elastic piece opposing the front attaching post is provided obliquely on a front end of a top wall of the cover; openings, which allow a pivot shaft of a pull-tab to pass through, are provided in side walls of the cover; a locking pawl is provided on a rear side of at least one of the openings; projecting expanded portions are provided on side faces of the front attaching post; hook pieces are provided on the expanded portions such that they project backward from the expanded portions while an accommodating portion is provided below each hook piece; and the cover is attached by fitting the front engaged portions into the accommodating portions.

[0012] Consequently, in the slider to which the pull-tab is attachable later, its cover has the locking pawl and the cover with an automatic stop mechanism can be attached simply and easily to the attaching posts erected on the body through the expanded portions and the hook pieces. Additionally, an individual user can assemble the slider by attaching a cover to the attaching posts accurately and easily by using his or her desired pull-tab to use the slider as an accessory.

[0013] Preferably, a guide portion is formed by providing a border between the expanded portion and the hook piece with a step.

[0014] As a consequence, the guide portions provided on the expanded portions are used to attach the cover to the front attaching post so that the front engaged portions of the cover can be accommodated simply into the accommodating portions.

[0015] Preferably, a vertex side of the hook piece is formed into a slope which is inclined inward.

[0016] Consequently, when the cover is attached to the front attaching post, the front engaged portion of the cover can be fitted to the hook piece easily by using the slope provided on the vertex side of the hook piece.

[0017] Preferably, the guide portions are formed symmetrically on outer sides of both sides of the front attaching post.

[0018] For this reason, the cover can be fitted to the front attaching post with its right and left sides balanced and accommodated in a stable configuration.

[0019] Preferably, the accommodating portion has a front end portion, opposes a front end of the front engaged portion; and the front end portion and a guide portion are formed to be continuous.

[0020] As a result, the front engaged portions provided on the cover can be guided effectively and easily to the accommodating portion in the attaching post erected on the body so as to hold the cover in a stable configuration.

[0021] Preferably, the expanded portion is formed so that a width of a side face thereof increases gradually from a vertex to a center while a guide portion is formed to be inclined.

[0022] Therefore, the front engaged portions provided on the cover can be guided by the guide portion smoothly and easily so as to facilitate an operation of attaching the cover. The effects which the present invention exerts are considerably great.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

FIG. 1 is an exploded perspective view of a slide fastener slider with an automatic locking device according to a first embodiment;

FIG. 2 is a perspective view of the slider after assembly;

FIG. 3 is a perspective view showing an front attaching post of the slider;

FIG. 4 is a partially broken front view showing a state in which a cover of the slider is mounted;

FIG. 5 is a partially broken front view showing a state in which the cover of the slider is mounted;

FIG. 6 is a sectional view of the slider taken along the line VI-VI in FIG. 4;

FIG. 7 is a sectional view of the slider taken along the line VII-VII in FIG. 5;

FIG. 8 is a sectional view showing a modification of the slider;

FIG. 9 is a perspective view showing a front attaching post of a slider according to a second embodiment;

FIG. 10 is a sectional view of the slider in FIG. 9;

FIG. 11 is a development view of a cover material of a known slider;

FIG. 12 is a perspective view of the cover; and

FIG. 13 is an exploded perspective view of another known slider.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] A slide fastener slider with an automatic locking device of this invention comprises a locking pawl as a lock mechanism on its cover. The slider is configured by three members, a body 1, a cover 7 and a pull-tab 8 as shown in FIGS. 1 and 2. The body 1 is molded by die-casting a metal, and the cover 7 is formed by pressing a metal sheet. Although the pull-tab 8 is molded by die-casting a metal preferably, it may be formed of synthetic resin.

[0025] In the body 1 of the slider, an upper blade 2 and a lower blade 3 are joined with a diamond 4, and flanges 5 are provided curvedly on both sides of the upper blade 2 so as to provide a guide groove 6 for guiding fastener elements made of various kinds of metals or synthetic resin. A pawl hole 24 for a locking pawl 30 is provided at a position shifted to one side with respect to the longitudinal direction in the center of the upper blade 2, and a front attaching post 10 and a rear attaching post 11 are erected on the upper blade 2 in front of and back of the pawl hole 24.

[0026] The front attaching post 10 has a trapezoidal support portion 12 capable of supporting the cover 7 on its center such that the support portion 12 is directed in the longitudinal direction. An inclined guide face 17 to which an elastic piece 31 provided on the cover 7 can be fitted is formed on the front face of the support portion 12. Expanded portions 13 are provided on both sides of the guide face 17 such that they stand vertically, and hook pieces 15 are extended on the inside, that is, the rear mouth side in an area from the vertex of the expanded portion 13 up to half thereof. Below that, accommodating portions 16 having a stepped shape and capable of accommodating front engaged portions 32 provided on the cover 7 are formed. The front of each accommodating portion 16 is closed to form a front end portion 36 so that the front engaged portion 32 is held in a stable manner. Further, a small protrusion 23 is provided in the center of the accommodating portion 16 to make contact with the front engaged portion 32 of the cover 7.

[0027] The expanded portion 13 and the hook piece 15 are provided on each of both outer sides of the support portion 12, and a step is provided on a border between the expanded portion 13 and the hook piece 15 by projecting the expanded portion 13 to the side. This step forms a guide portion 14 which acts as a guide face when the front engaged portion 32 of the cover 7 is pushed in. The guide portion 14 meets the front end of the accommodating portion 16 in the vertical direction. The vertex side of the hook piece 15 has a slope 19 which is inclined inward, and the side face shape of the expanded portion 13 is formed to be increased gradually from the vertex to the center so that the guide portion 14 provides an inclined configuration. As a consequence, an operation of pushing the front engaged portion 32 of the cover 7 is facilitated so that the support portion 12, the expanded portion 13 and the hook piece 15 are formed integrally.

[0028] The rear attaching post 11 erected on the upper blade 2 of the body 1 has guide faces 21 projecting convexly which allow the rear engaged portion 33 of the cover 7 to move vertically, the guide faces being provided on both sides inside of the rear attaching post 11. Further, the top of the rear attaching post 11 has a vertex portion 26 projecting inwardly in a hook shape so as to stop the upward motion of the rear engaged portions 33. Furthermore, a pull-tab guide portion 22 which slides and guides a pivot shaft 37 of the pull-tab 8 is provided integrally on the inner face of the rear attaching post 11 such that the pull-tab guide portion 22 is inclined forward so as to be shifted to one way avoiding the pawl hole 24.

[0029] The cover 7 is provided by bending side walls 27 from a top wall 28, and the elastic piece 31 which makes an elastic contact with the guide face 17 provided on the front face of the support portion 12 is provided so as to extend on the front end of the top wall 28. Each side wall 27 on both sides have an opening 29 in which the pivot shaft 37 is fitted, and the locking pawl 30 is provided downward so as to be connected from the rear end of the opening 29 of one side. The front engaged portions 32 and the rear engaged portions 33 each projecting outwardly are provided at the bottom of the front and rear ends of the side walls 27 so that they engage the accommodating portions 16 in the front attaching post 10 and the guide faces 21 of the rear attaching post 11.

[0030] Upon assembly of the slider, the pivot shaft 37 of the pull-tab 8 is fitted in the opening 29 of the cover 7, and the rear engaged portions 33 are inserted into the guide faces 21 in the rear attaching post 11. In addition, with the locking pawl 30 opposing the pawl hole 24, the elastic piece 31 is brought into an elastic contact with the guide face 17 of the support portion 12, and then, the front engaged portions 32 are pushed in from above by using the slopes 19 of the hook pieces 15 formed on the front attaching post 10, and fitted to the accommodating portions 16 such that the cover 7 can rotate around the small protrusions 16.

[0031] Upon the operation of the slider with the pull-tab 8, when the pull-tab 8 is pulled upward by gripping a grip portion 38 of the pull-tab 8, the pivot shaft 37 slides along the pull-tab guide portion 22 so that the rear engaged portions 33 of the cover 7 are raised to the movable upper limit of the guide faces 21 in the rear attaching post 11. At the same time, the locking pawl 30 projecting inward is retreated through the pawl holes 24 and withdrawn from the guide groove 6 to allow the slider to slide on the fastener chain.

First Embodiment

[0032] A slide fastener slider with an automatic locking device according to a first embodiment shown in FIGS. 1 to 7 is preferably configured in such a manner that its body 1 is molded by die-casting metal such as zinc alloy or aluminum alloy, a cover 7 is formed by pressing a steel sheet or the like, and a pull-tab 8 is molded by die-casting

metal. The cover 7 may be molded by using thermoplastic resin such as polyamide, polyacetal, polypropylene or polybutylene terephthalate, and a pull-tab which an individual has for his or her favor may be used as the pull-tab 8.

[0033] The slider with the automatic stop mechanism is configured by three members, the body 1, the cover 7 and the pull-tab 8. A locking pawl 30 as a lock mechanism is provided on one side face of the cover 8 so that the locking pawl 30 can be inserted between right and left fastener elements by operating the pull-tab 8. The fastener elements which can be applied to the slider shown in the figure as an example include fastener elements attached symmetrically on the front and rear faces of a single side edge of a fastener tape, for example, fastener elements molded by die-casting metal; fastener elements formed by pressing and resin fastener elements molded by injection molding of synthetic resin. Also, zigzag-like fastener elements of resin monofilament can be applied to the fastener chain attached to one side face of a fastener tape so as to sandwich it. In case of a fastener chain in which coil-like fastener elements are attached to one side edge of the fastener tape, the slider with an automatic stop mechanism can be applied by forming a flange 5 of the body 1 of the slider only on a side where the fastener elements exist. Therefore, the configuration of the body 1 of the slider can be applied to all types except a concealed type slide fastener. Because the pull-tab 8 can be attached later to the slider, the user can attach a pull-tab prepared by himself or herself at the time of assembly of the slider. Thus, the slider with an automatic stop mechanism can be assembled manually.

[0034] In the body 1 of the slider, as shown in FIG. 1, an upper blade 2 and a lower blade 3 are jointed with a diamond 4, and the flanges 5 for guiding fastener elements are provided curvedly on both side edges of the upper blade 2 and the lower blade 3 so as to form a guide groove 6 for guiding various kinds of fastener elements. A pawl hole 24 for the locking pawl 30 is provided in a position shifted to one side in the longitudinal direction and in the center of the upper blade 2, and a front attaching post 10 and a rear attaching post 11 are erected on the upper blade 2 in front of and back of the pawl hole 24.

[0035] The front attaching post 10 has a trapezoidal support portion 12 capable of supporting the cover 7 on the diamond 4 of the body 1 such that the support portion 12 is directed in the longitudinal direction. An inclined guide face 17, to which an elastic piece 31 provided on the cover 7 can be fitted so as to contact it elastically, is formed on the front face of this support portion 12. The expanded portions 13 are provided on both sides of the guide face 17 such that they stand vertically. Hook pieces 15 having hook-shape are provided extendedly in an area from the vertex of the expanded portion 13 to halfway or the middle thereof such that the hook pieces 15 extend toward the rear mouth. An accommodating portion 16 as a dented portion is provided below the hook piece 15 so that a front engaged portion 32 of the cover 7 is accommodated and engaged. The front side of the accommodating portion 16 has a closed front end portion 36 which opposes the front end of the front engaged portion 32 of the cover 7 so as to hold the front engaged portion 32 in a stable configuration. Further, a small protrusion 23 is provided in the center of the accommodating portion 16 to make contact with the inner surface of the front engaged portion 32 of the cover 7.

[0036] The expanded portion 13 and the hook piece 15 are provided on each of both sides of the support portion 12, and a step is provided on a border between the expanded portion 13 and the hook piece 15 by projecting the expanded portion 13 sideway. When the cover 7 is set, this step forms a guide portion 14 which acts as a guide face when the front engaged portion 32 provided on the cover 7 is pushed in. The guide portion 14 meets the front end portion 36 of the accommodating portion 16 in the vertical direction and they are continuous. As for the configuration of the expanded portion 13 seen from sideway, the width thereof is increased gradually from the vertex to the center, so that the guide portion 14 is formed to be inclined to the body 1, thereby guiding the front engaged portion 32 of the cover 7 smoothly. The vertex of the hook piece 15 is projected upward compared to the support portion 12 so as to facilitate accommodation of the elastic piece 31 of the cover 7 in a stable manner. Further, the vertex side of the hook piece 15 has a slope 19 which is inclined inward so as to facilitate an operation of pushing the front engaged portion 32 of the cover 7. That is, the slope 19 is formed on the side face of the hook piece 15, and the vertex side of the side face is formed to be inclined more inwardly compared to the body 1 side. Here, the inward means the center of the body 1 of the slider in the width direction thereof. Consequently, the support portion 12, the expanded portion 13 and the hook piece 15 are molded integrally.

[0037] In the meantime, the guide portion 14 between the expanded portion 13 and the hook piece 15 provided on the side face of the front attaching post 10 may be formed only on one side of the attaching post 10. Even if the surface of the border between the expanded portion 13 and the hook piece 15 is formed into a flat shape without the step as shown in FIG. 8, the front engaged portion 32 of the cover 7 may be guided to the accommodating portion 16 easily by the other guide portion 14 and engaged.

[0038] The rear attaching post 11 erected on the upper blade 2 of the body 1 has guide faces 21 projecting convexly which allow a rear engaged portion 33 provided on the cover 7 to move vertically and easily, the guide faces 21 being provided on both sides inside of the rear attaching post 11. The top of the rear attaching post 11 has a vertex portion 26 projecting inwardly in a hook shape so as to stop the rear engaged portion 33 from moving upward. Further, the pull-tab guide portion 22 is provided projectingly at a position shifted to one way avoiding the pawl hole 24 on the inner face of the rear attaching post

11, that is, on the shoulder mouth side in parallel to the pawl hole 24. The pull-tab guide portion 22 is formed to be inclined toward the shoulder mouth side so as to guide the pivot shaft 37 of the pull-tab 8 in a sliding manner.

[0039] A low protruded portion 35 is provided at each corner portion on the side face of the front attaching post 10 and the rear attaching post 11 provided on the upper blade 2 of the body 1, that is, each portion which opposes the bottom end of the front engaged portions 32 and the rear engaged portions 33 of the cover 7. Consequently, the cover 7 is prevented from rattling when the cover 7 is set on the front and rear attaching posts 10, 11. In addition, a concave groove 25 is provided between the front and rear attaching posts 10, 11 on the upper blade 2. As a consequence, when the pull-tab 8 is attached through a ring-like clamper not through the straight pivot shaft 37, the clamper can move smoothly on the upper blade 2. A concave groove 18 is provided on the bottom end of the guide face 17 on the front end of the support portion 12 such that the concave groove 18 is dented into the diamond 4 of the body 1, and consequently, the elastic piece 31 provided on the cover 7 can be accommodated easily regardless of its length.

[0040] The cover 7 is provided by bending side walls 27 from a top wall 28, and the elastic piece 31 which makes an elastic contact with the inclined guide face 17 provided on the front face of the support portion 12 is provided on the front end of the top wall 28 extendedly. Each side wall 27 on both sides has an opening 29 in which the pivot shaft 37 is fitted, and the locking pawl 30 is provided to project downward so as to be connected from the rear end of the opening 29 formed on one side. The front engaged portions 32 and the rear engaged portions 33 each projecting outwardly are provided at the bottom of the front and rear ends of the side walls 27, so that they engage the accommodating portions 16 in the front attaching post 10 and the guide faces 21 of the rear attaching post 11.

[0041] Upon assembly of the slider, the pivot shaft 37 of the pull-tab 8 is fitted in the opening 29 of the cover 7, and the rear engaged portions 33 are inserted into the guide faces 21 in the rear attaching post 11. In addition, with the locking pawl 30 opposing the pawl hole 24, the elastic piece 31 is brought into an elastic contact with the guide face 17 provided on the front face of the support portion 12, and then, the front engaged portions 32 of the cover 7 are pushed in from above by using the slopes 19 of the hook pieces 15 formed on the front attaching post 10. Since the front end of the front engaged portion 32 is brought into a contact with the front end portion 36 of the accommodating portion 16 by the guide portion 14, the front engaged portion 32 does not deflect from a predetermined position but is accommodated in and engaged with the accommodating portion 16 such that the cover 7 can rotate around the small protrusion 16.

[0042] Upon the operation of the slider with the pull-tab 8, when the pull-tab 8 is pulled upward by gripping a grip portion 38 of the pull-tab 8, the pivot shaft 37 slides along the pull guide portion 22, so that the rear engaged portions 33 of the cover 7 are raised to the movable upper limit of the guide faces 21 in the rear attaching post 11. At the same time, the locking pawl 30 projecting inside the guide groove 6 through the pawl hole 24 is retreated upward and withdrawn from the guide grooves 6 to allow the slider to slide in the back and forth direction of the fastener chain.

Second embodiment

[0043] A slide fastener slider with an automatic locking device according to a second embodiment shown in FIGS. 9 and 10 has the same configuration as the slider of the first embodiment except that the configuration about a relation between the expanded portion 13 and the hook piece 15 provided on each of both sides of the support portion 12 in the front attaching post 10 is different.

[0044] A front attaching post 10 erected on a body 1 has a trapezoidal support portion 12 in the center thereof, and expanded portions 13 are provided on both sides of the support portion 12 so as to project from the support portion 12. A hook piece 15 is projected from a substantially upper half portion of the expanded portion 13 to the rear mouth side, and the vertex side of the hook piece 15 is provided with a slope 19 which is inclined inward. A step is provided on a border between the expanded portion 13 and the hook piece 15 so as to form a guide portion 14 for guiding a front engaged portion 32 of a cover 7. The guide portion 14 has a larger step as it goes upward while there is no step between the expanded portion 13 and the hook piece 15 at the bottom portion. Furthermore, there is provided no step between the top end of the support portion 12 and the hook piece 15. Even if the step is provided only on the upper portion between the expanded portion 12 and the hook piece 15, the operation effects of the invention are not different from those of the first embodiment.

[0045] According to this embodiment, no protruded portion 35 is provided which is protruded at the corner portion of the proximal portion of an accommodating portion 16 provided below the support portion 12 of the front attaching post 10. The assembly of the slider and the operation of the slider are the same as those in the first embodiment.

[0046] The slider with the automatic stop mechanism according to the present invention allows the user to assemble the slider easily and simply without use of any tool by applying his or her desired pull-tab. The slider can be applied to fastener chains using a variety of fastener elements, and the fastener chains are applicable in a variety of fields.

Claims

1. A slide fastener slider with an automatic locking de-

vice, being **characterized in that** a pawl hole (24) is provided in a body (1); front and rear attaching posts (10, 11) are erected in front of and back of the pawl hole (24); a cover (7) comprises front engaged portions (32) which engage the front attaching post (10) and rear engaged portions (33) which are movable within the rear attaching post (11); an elastic piece (31) opposing the front attaching post (10) is provided obliquely on a front end of a top wall (28) of the cover(7); openings (29), which allow a pivot shaft (37) of a pull-tab (8) to pass through, are provided in side walls (27) of the cover (7); a locking pawl (30) is provided on a rear side of at least one of the openings(29); projecting expanded portions (13) are provided on side faces of the front attaching post (10); hook pieces (15) are provided on the expanded portions (13) such that they project backward from the expanded portions (13) while an accommodating portion (16) is provided below each hook piece (15); and the cover (7) is attached by fitting the front engaged portions (32) into the accommodating portions (16).

2. The slide fastener slider with the automatic locking device according to claim 1, being **characterized in that** a guide portion (14) is formed by providing a border between the expanded portion (13) and the hook piece (15) with a step.

3. The slider for the slide fastener with the automatic locking device according to claim 1, being **characterized in that** a vertex side of the hook piece (15) is formed into a slope (19) which is inclined inward.

4. The slide fastener slider with the automatic locking device according to claim 2, being **characterized in that** the guide portions (15) are formed symmetrically on outer sides of both sides of the front attaching post (10).

5. The slide fastener slider with the automatic locking device according to claim 1, being **characterized in that** the accommodating portion (16) has a front end portion(36); opposes a front end of the front engaged portion (32); and the front end portion (36) and a guide portion (14) are formed to be continuous.

6. The slide fastener slider with the automatic locking device according to claim 1, being **characterized in that** the expanded portion (13) is formed so that a width of a side face thereof increases gradually from a vertex to a center while a guide portion (14) is formed to be inclined.

FIG. 1

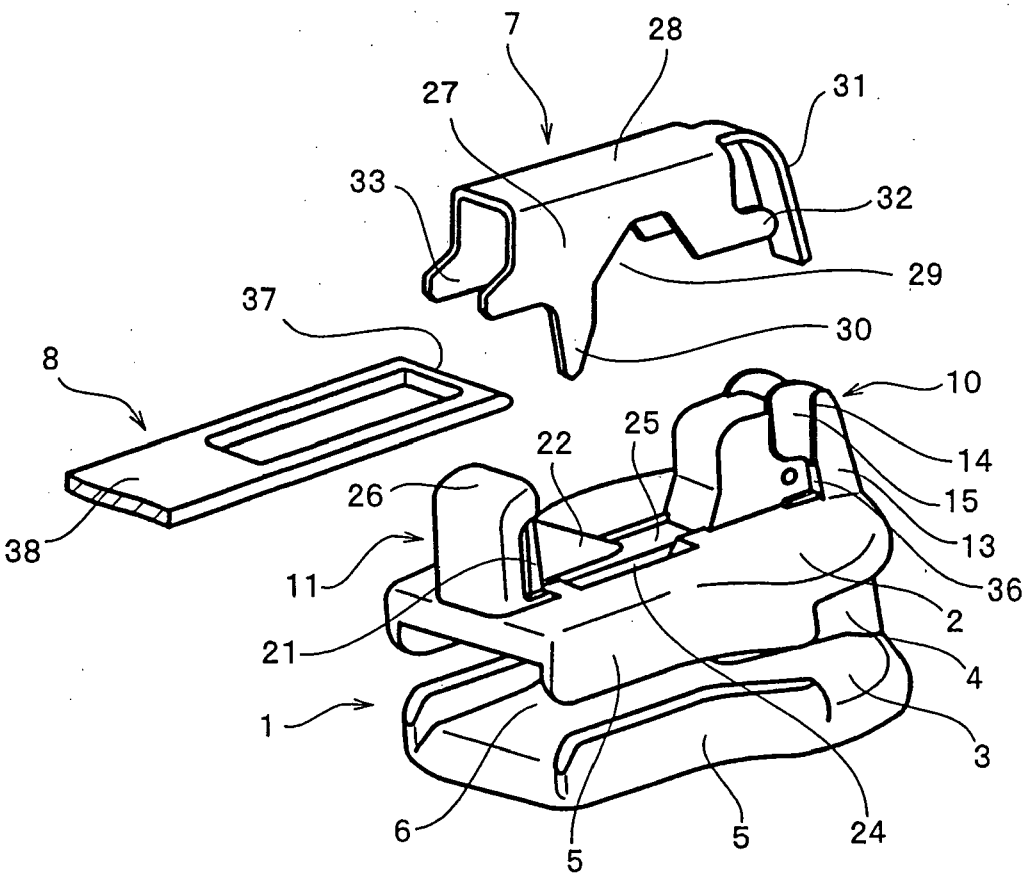

FIG. 2

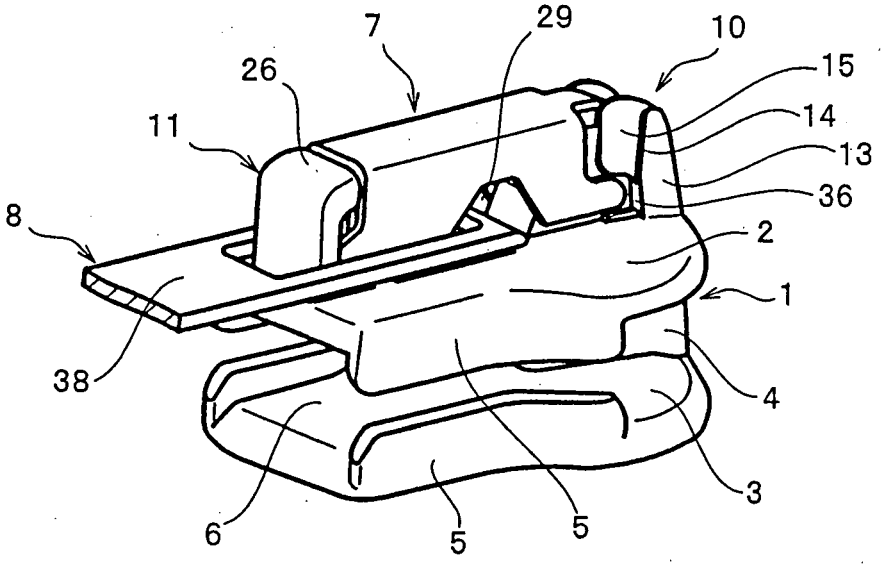
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FIG. 3

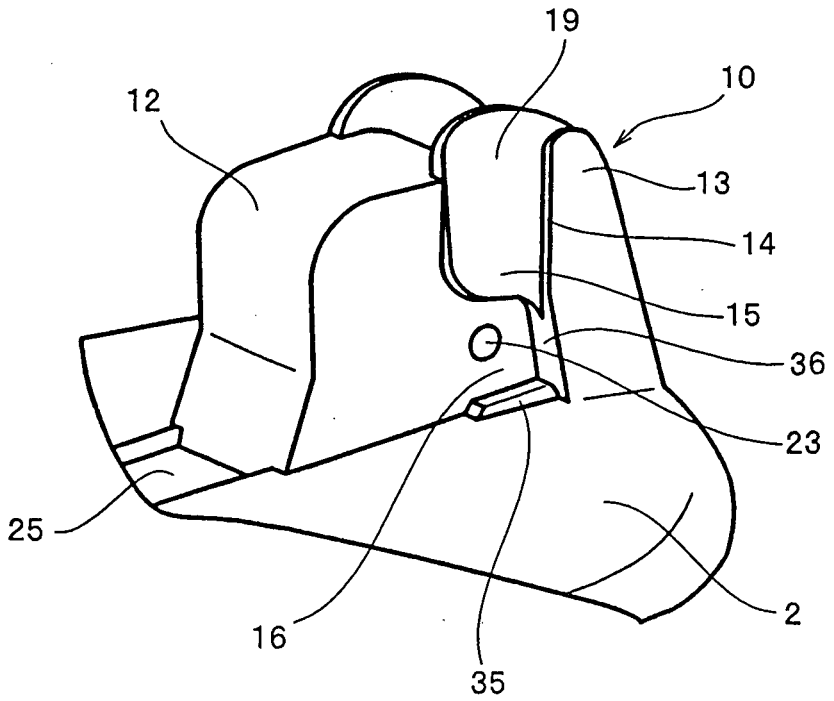
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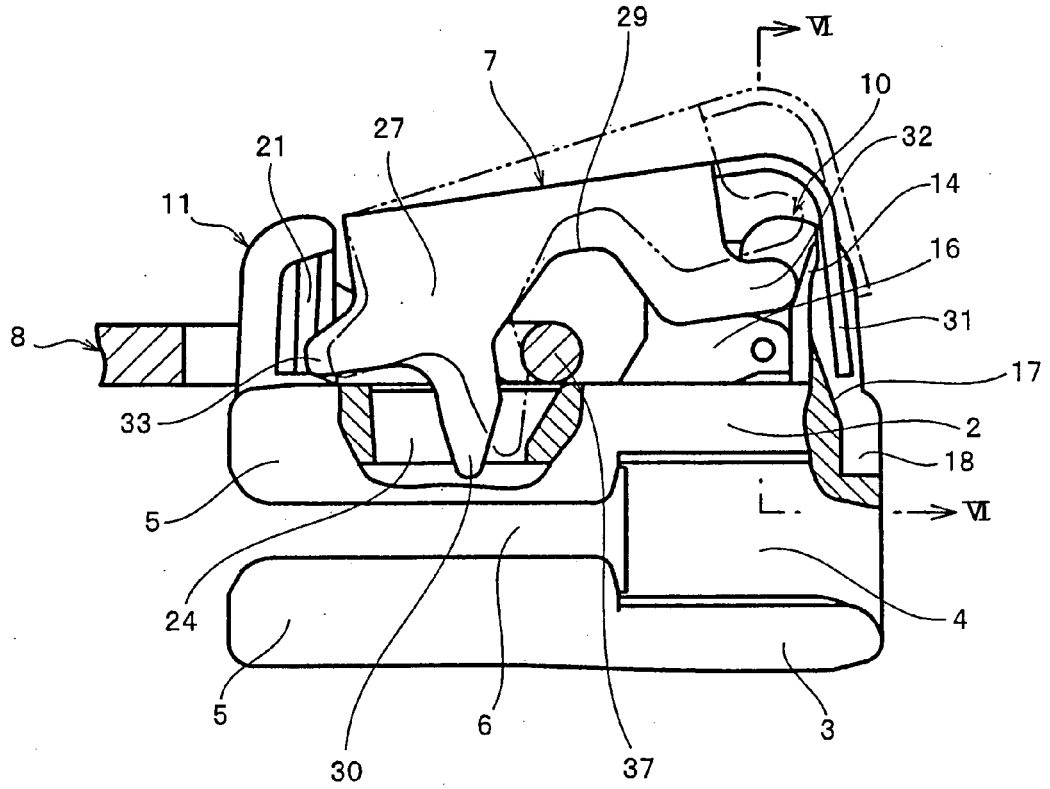
FIG. 4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37

FIG. 5

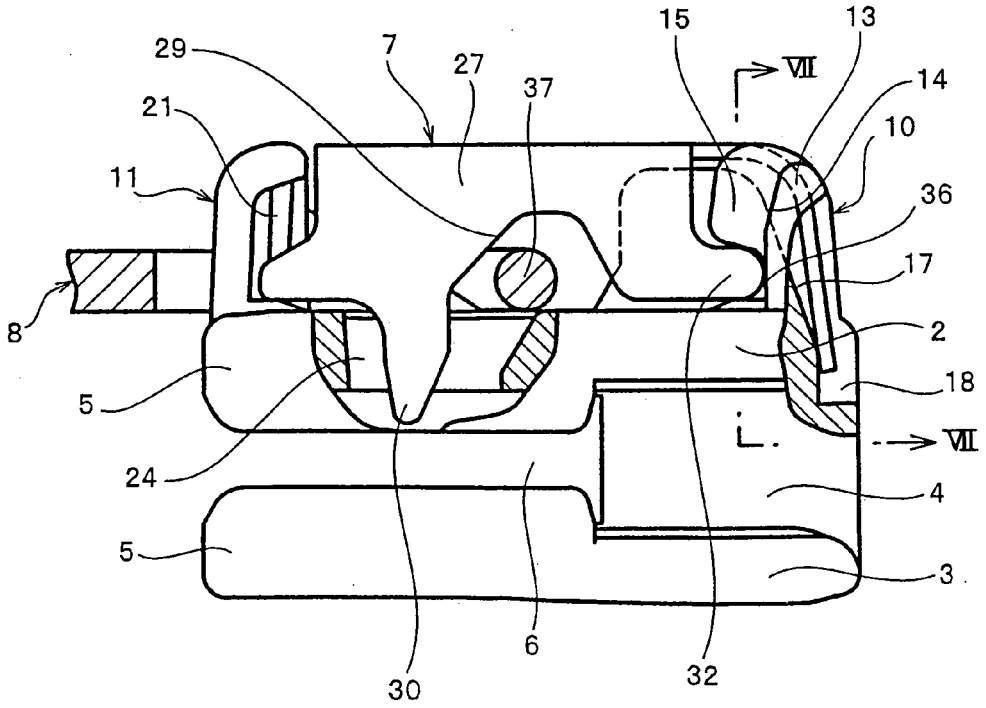
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FIG. 6

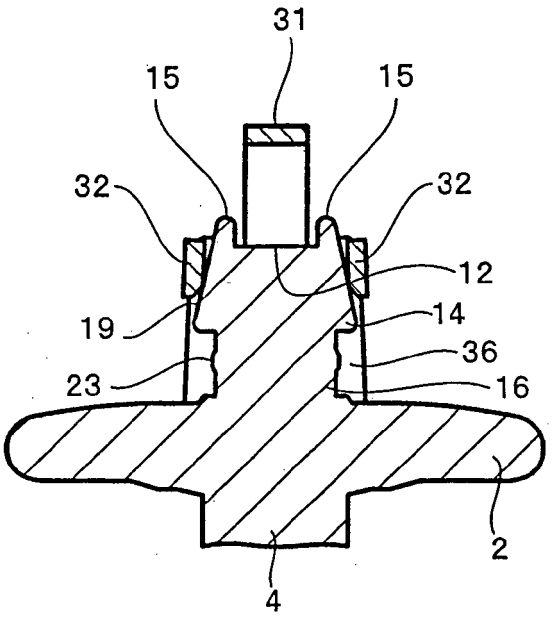


FIG. 7

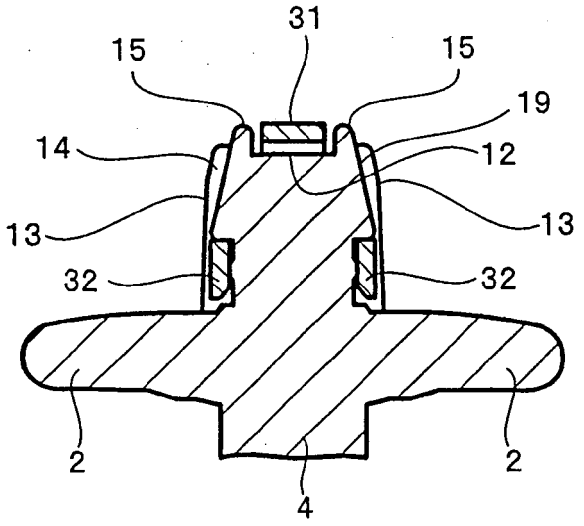


FIG. 8

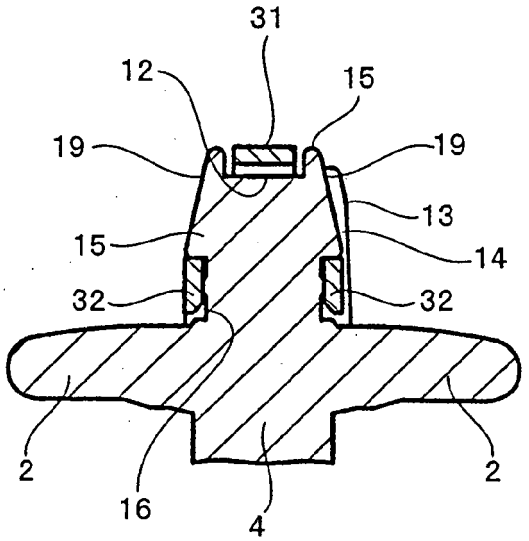


FIG. 9

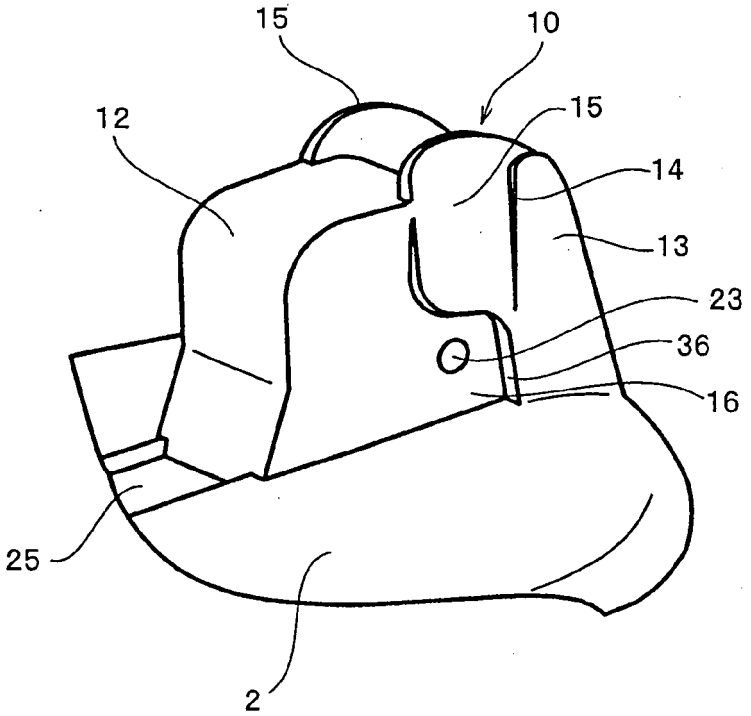


FIG. 10

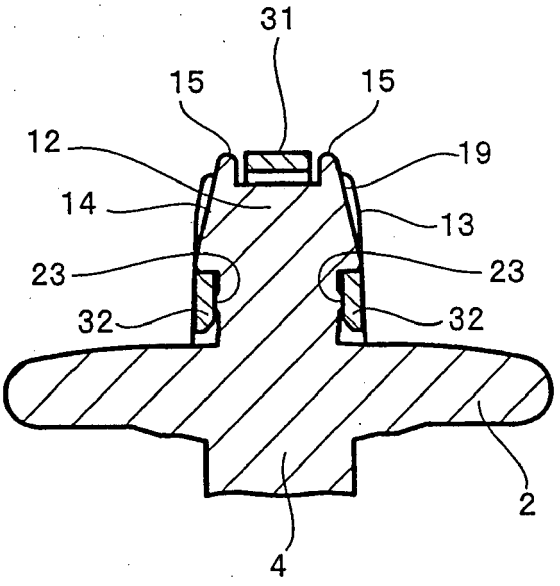


FIG. 11
PRIOR ART

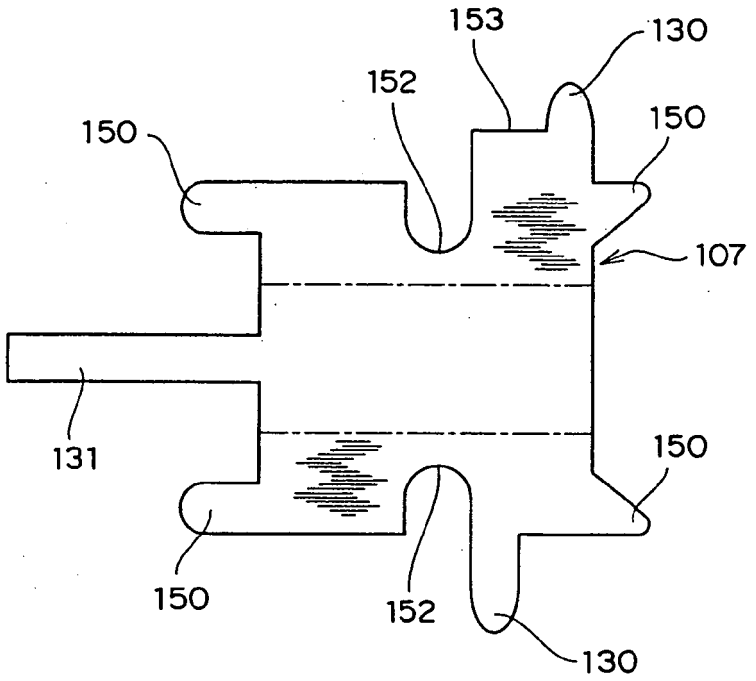


FIG. 12
PRIOR ART

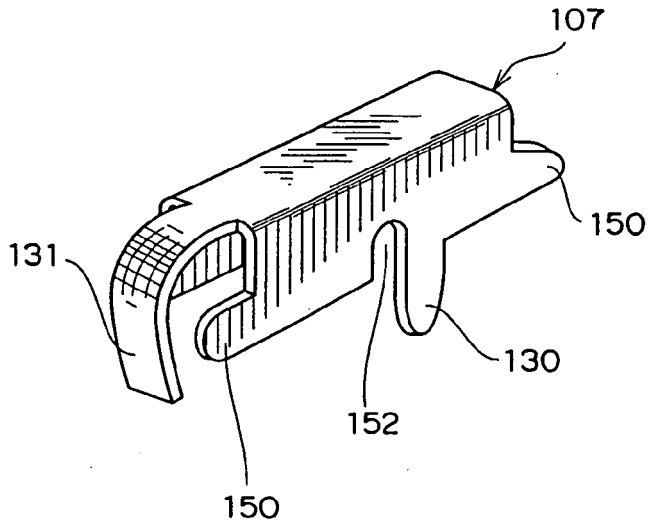
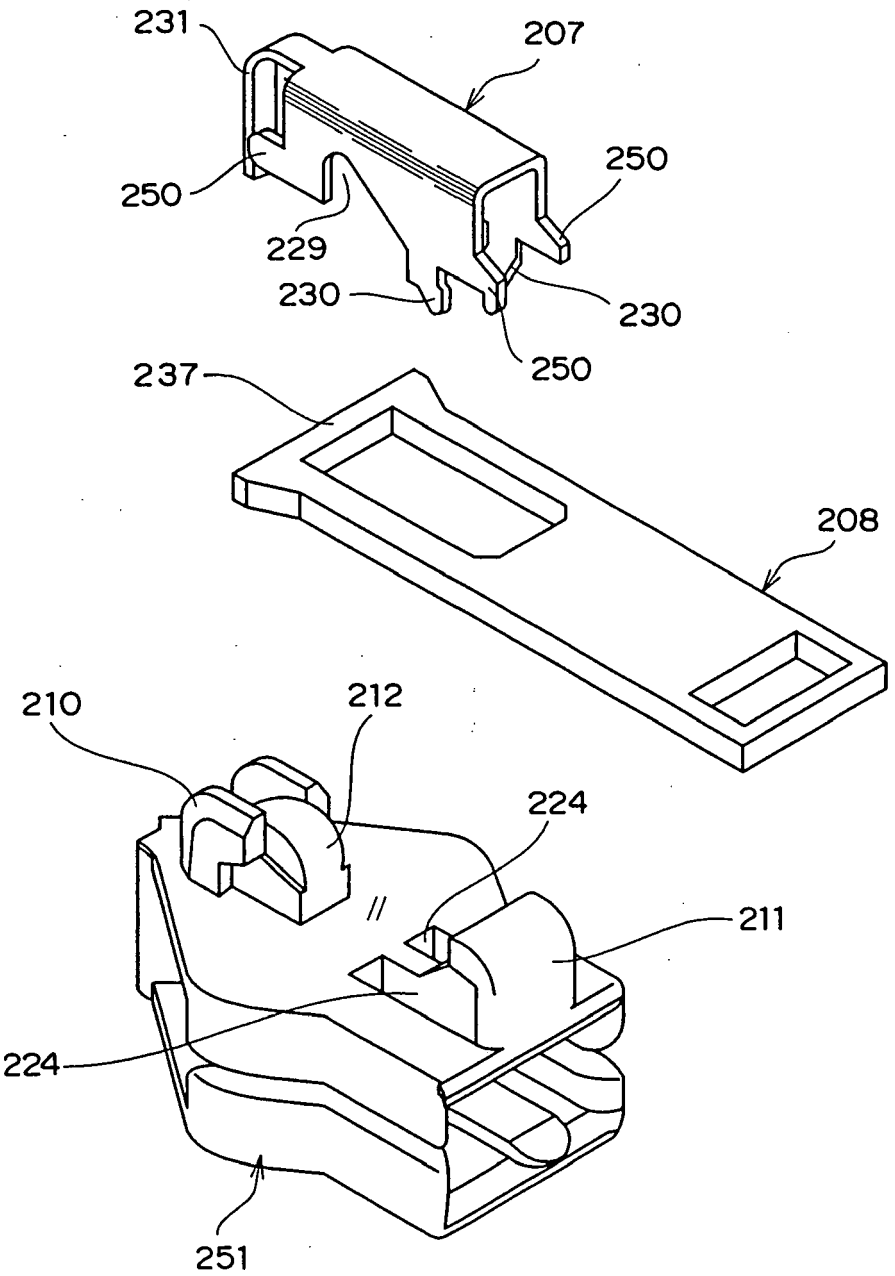


FIG. 13
PRIOR ART



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EUROPEAN SEARCH REPORT

Application Number
EP 06 02 1632

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
D,X	US 3 267 544 A (DAVIES ALFRED V) 23 August 1966 (1966-08-23) * column 1, line 61 - column 2, line 26; figures 1-3 * -----	1-6	INV. A44B19/30
X	US 2 657 445 A (VITESZLAV WEBER) 3 November 1953 (1953-11-03) * figures 1-16 * -----	1-6	

TECHNICAL FIELDS SEARCHED (IPC)

A44B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 November 2006	Horubala, Tomasz

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