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(54) SET OF ELEMENTS PERFECTED FOR JOINING A PLINTH TO THE FOOT OF A PIECE OF FURNITURE OR THE LIKE

(57) Set (2) of improved elements for joining at least one base (4, 4') to the foot (6) of a piece of furniture or the like, characterized in that it comprises:
- at least one support element (8, 8') for a magnet (10, 10'), or for a magnetic metal part, preferably ferromagnetic, said at least one support element (8, 8') being configured to be removably associated with said base (4, 4'), said at least one support element (8, 8') being provided with a shaped protrusion (16') configured to be inserted and then rotated inside a channel (14) obtained in said base (4, 4'),
- a hooking element (12) which is configured to be removably associated with said foot (6) of said piece of furniture, or the like, so as to hook onto the shaft (17) of said foot (6), said hooking element (12) comprising at least a part (27, 27', 60) in magnetic metal material, preferably ferromagnetic, or a magnet, to allow the magnetic connection with said magnet (10), or with said magnetic metal part, which is mounted on said at least one support element (8, 8'), and thus allowing the union of said base (4, 4') to said foot (6),
and also characterized by the fact that:
- on said at least one support element (8, 8') there are defined a pair of gripping portions (33, 33') configured to allow gripping by a user respectively with the thumb and another finger of the same hand, in order to facilitate the rotation of said shaped protrusion (16') of said at least one support element (8, 8') inside the channel (14) obtained in said base (4, 4').

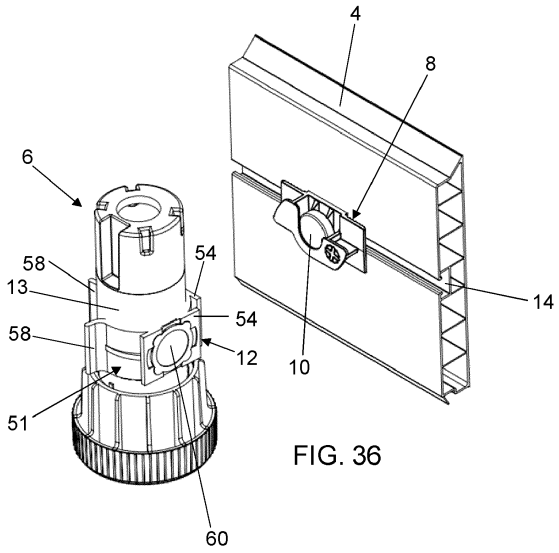

FIG. 36

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Description

[0001] The present invention relates to an improved set of elements for joining at least one base to the foot of a piece of furniture or the like.

[0002] It is known that many types of furniture, such as the modules of modular kitchens, are frontally buffered, at floor level, by bases in extruded plastic or wood or metal based material (generally aluminum). In particular, these bases are hooked from the front to the support feet of the piece of furniture while their visible surface is suitably treated and coated in such a way as to be aesthetically pleasing.

[0003] To date, various coupling devices are already known to fix the bases to the feet and, among these, there is a device that consists of a slide, to be inserted into a corresponding longitudinal guide defined in the base, and by one or more tabs (hooks), suitably curved and elastic, which branch off from the slide and are suitable for attaching to the foot surrounding it.

[0004] The application of these devices first involves fixing them to the base and positioning them so as to be frontally aligned with the corresponding feet of the piece of furniture. Subsequently, the base is brought closer to the feet and, by operating an appropriate pressure, the elastic fins are elastically deformed to allow them to embrace the foot.

[0005] This device has been on the market for a long time and is already widely appreciated for its qualities, however it is not optimal for hooking the feet positioned at the corners of the furniture.

[0006] Furthermore, at present, in correspondence with the corners of the piece of furniture, the bases are connected to each other by means of a corner piece having a cross section that has a hollow central portion of a substantially square or rectangular shape. Furthermore, from the hollow portion some sides branch off, two by two parallel, which laterally define the respective seats within which the leading edges of the two baseboards to be joined fit together.

[0007] This solution is not completely satisfactory since, on site, this angle is particularly visible and impactful.

[0008] Furthermore, the installation and use of such a corner piece is highly dependent on the manufacturing and manufacturing tolerances of the base, as it is necessary that the latter has a correct size to be inserted and stably retained within the corresponding seat defined by the sides of the base. angular. It is easy to understand how this is particularly inconvenient, also considering that it happens quite frequently that the clogs have manufacturing inaccuracies (for example they are not cut precisely), but also of manufacturing, especially when they are obtained by extrusion.

[0009] Furthermore, the assembly of these angles is rather laborious since the non-optimal insertion of the head of the base in a first corner requires a corresponding correction, proportional but in the opposite direction, during the insertion of the other head of the same base. in a second angle, thus forcing the installer to make a plurality of attempts and corrections.

[0010] The object of the invention is to propose a set of elements for joining the bases of a piece of furniture or the like which allows to overcome, at least in part, the drawbacks of the known solutions.

[0011] Another object of the invention is to propose a set of elements which allows to obtain a pleasant overall aesthetic effect and which gives the observer the sensation of being in front of a high quality product, both from an aesthetic and functional point of view.

[0012] Another object of the invention is to propose a set of elements which allows a simple, easy, quick and precise assembly and junction of the bases, without the need to carry out continuous corrections.

[0013] Another object of the invention is to propose a set of elements which allows the installer not to be bound by the inaccuracies in the construction and processing (cutting) of the bases.

[0014] Another object of the invention is to propose a set of elements which has an alternative characterization, both in constructive and functional terms, with respect to the traditional ones.

[0015] Another object of the invention is to propose a set of elements which can be obtained simply, quickly and with low costs.

[0016] Another object of the invention is to propose a set of elements that can be mass-produced quickly and efficiently.

[0017] Another object of the invention is to propose a set of elements that can be easily used also at the corners of the piece of furniture.

[0018] Another object of the invention is to propose a set of elements that have high standards, both functional and aesthetic, and at the same time of accessible cost, thus allowing the possibility of its diffusion on a large scale.

[0019] These objects, both individually and in any combination thereof, as well as others that will emerge from the following description, are achieved, according to the invention, with a set of elements with the characteristics indicated in claim 1.

[0020] The present invention is further below clarified in one of its preferred embodiments shown for purely illustrative and non-limiting purposes with reference to the attached drawings, in which:

Figure 1	shows a first perspective view from above of the set of elements according to the invention with the baseboards joined together,
Figure 2	shows a second perspective view from above of the set of elements according to the invention

with the bases joined together,

Figure 3 shows a top plan view of the set of elements according to the invention with the bases joined together,

Figure 4 shows a first exploded perspective view from above of the complex of elements according to the present invention,

Figure 5 shows a second exploded perspective top view of the assembly of elements according to the present invention,

Figure 6 shows a front perspective view from above of a support element for a magnet,

Figure 7 shows a rear perspective view from above of a support element for a magnet,

Figure 8 shows the connecting element of the assembly of elements according to the invention in a lateral perspective view from above,

Figure 9 shows the element of fig. 8 in a different side perspective view from above,

Figure 10 shows a perspective view of a variant of the assembly of elements according to the invention associated with a foot and a base,

Figure 11 shows them in a plan view,

Figure 12 shows them in side view,

Figure 13 shows the hooking element of the assembly of elements according to the invention mounted on the foot,

Figure 14 shows a variant of the support element for the magnet mounted and locked on the base,

Figures 15a and 15 bshow in sequence the union of the hooking element of to the support element with magnet of fig. 14,

Figure 16 shows in front view a first variant of the support element for the magnet,

Figure 17 shows the support element in the same variant of fig. 14,

Figure 18 shows the support element in the same variant of fig. 14,

Figure 19 shows the support element in the same variant of fig. 14 and with the magnet inserted,

Figure 20 shows a perspective view of the coupling element of the assembly of elements according to the invention,

Figure 21 shows it in plan

Figure 22 shows it in a different perspective view,

Figures 23a-e show the sequence of steps to disassociate the hooking element from a foot,

Figure 24 shows in perspective view a further (second) variant of the support element for the magnet,

Figure 25 shows a plan view of the support element of fig. 24,

Figure 26 shows the support element of fig. 24,

Figure 27 shows in a plan view the support element of the magnet of fig. 14,

Figure 28 shows the support element of fig. 14,

Figure 29 shows in a lateral perspective view a further embodiment of the hooking element,

Figure 30 shows a perspective view of the hooking element of fig. 29,

Figure 31 shows in a different perspective view the hooking element of fig. 29,

Figures 32a - 32c show the sequence of steps for associating/disassociating the hooking element of fig. 29 to/from a foot,

Figure 33 shows a perspective view of the foot with associated hooking element of fig. 29,

Figure 34 shows in a plan view the foot with associated hooking element of fig. 29,

Figure 35 shows in perspective view the assembly of elements according to the invention before the association of the hooking element of fig. 29 to the support element of the magnet of fig. 6,

Figure 36 shows in perspective view, from a different angle, the element assembly of fig. 35,

Figure 37 shows in perspective view the assembly of elements according to the invention before the association of the hooking element of fig. 29 to two different support elements of fig. 6, each of which is mounted on a respective base,

Figure 38 shows a perspective view of the set of elements of Fig. 37 from a different angle,

Figure 39 shows a perspective view of the complex of elements of Fig. 37 with the bases joined together,

Figure 40 shows a perspective view of the set of elements of Fig. 39 from a different angle, and

Figure 41 shows a plan view of the complex of elements of fig. 39.

[0021] As can be seen from the figures, the assembly 2, according to the invention, for joining a first base 4 and/or a second base 4' to a foot 6 of a piece of furniture or the like, comprises a hooking element 12, which is configured to be removably associated with the foot 6 of the piece of furniture or the like. Conveniently, the hooking element 12 is made at least in part of magnetic metal material, preferably ferromagnetic, or of magnetized material (ie a magnet).

[0022] The assembly 2 further comprises a first support element 8 for a first magnet 10, which is configured to be

magnetically connected to the hooking element 12; suitably, the first support element 8 is also configured to be associated, preferably removably, with the first base 4.

[0023] Preferably, the assembly 2 according to the invention further comprises a second support element 8' for a second magnet 10', which is configured to be magnetically connected to the hooking element 12.

[0024] Conveniently, the second support element 8' is configured to be associated, preferably removably, with the second base 4', which is intended to be positioned at an angle with respect to the first base 4, preferably orthogonal with respect to the first base 4'.

[0025] Advantageously, the second support element 8' can be substantially congruent and interchangeable with the first support element 8. For this reason, all the characteristics described below with particular reference to the first support element 8, are to be understood as described, mutatis mutandis, also for the second support element 8'.

[0026] Preferably, the assembly can also comprise a connecting element 3 intended to be arranged in correspondence with a contact area between the first base 4 and the second base 4'. Preferably, according to the present invention, at least the first support element 8 is configured to cooperate with the connecting element 3 to keep said connecting element 3 associated with the first base 4'.

[0027] Preferably, in a possible embodiment not shown here, both the first and the second support element 8, 8' are configured to cooperate with the connecting element 3 to maintain the same connecting element 3 associated with the respective first base 4 and second base 4'.

[0028] Conveniently, the first base 4, the second base 4' and/or the foot 6 can be substantially of the traditional type, per se known to those skilled in the art.

[0029] Conveniently, the first and/or second support element 8, 8' is provided with a shaped protrusion 16' configured to be inserted and then rotated, in particular by about 90°, inside a channel 14 obtained respectively in said first base 4 or in said second base 4'.

[0030] Conveniently, a pair of gripping portions 33, 33' are defined on the first and/or second support element 8, 8' configured to allow a user to grip with the thumb and another finger of the same hand respectively, to thus facilitate the rotation of said shaped protrusion 16' of said first and/or second support element 8, 8' inside the channel 14 obtained respectively in said first base 4 or in said second base 4'.

[0031] Preferably, the first and/or second support element 8, 8' is provided with a bayonet coupling 16, defined by said shaped protrusion 16', to removably associate the first or second support element 8, 8' respectively to said first base 4 or to said second base 4'.

[0032] As anticipated above, the hooking element 12 is made at least in part of ferromagnetic material to thus allow magnetic attraction/attachment with a magnet 10 mounted (or intended to be mounted) on said first support element 8, to thus allow the union/attachment of said base 4 to said foot 6.

[0033] Preferably, in a possible embodiment, the hooking element 12 is made at least in part of ferromagnetic material to thus allow magnetic attraction/attachment with the first magnet 10 mounted (or intended to be mounted) on the first support element 8 and with the second magnet 10' mounted (or intended to be mounted) on the second support element 8', to thus allow the union/attachment of the first base 4 and of the second base 4' to the foot 6.

[0034] Preferably, the first and/or the second support element 8, 8' can substantially have the shape of a plate, and in particular its development in thickness is less than r compared to that of the other two dimensions. Conveniently, the first and/or second support element 8, 8' comprises two walls, and in particular a front wall 9, configured to face in use condition (ie when the first base 4 is associated with the foot 6) towards the foot 6, and a rear wall 9' configured to face in use condition towards the first base 4. Said walls 9, 9' can be joined together by a plurality of stiffening sections, walls or and/or sections which suitably develop and define the thickness of the support element.

[0035] Advantageously, the first and/or second support element 8, 8' can be made of polymeric materials, preferably of plastic. Conveniently, the first support element 8 can be made by injection molding. Alternatively, the first and/or second support element 8, 8' could be made of wood or a non-magnetic metal or other materials in general preferably non-magnetic.

[0036] Conveniently, the first and/or second support element 8, 8' is provided, in correspondence with its rear wall 9', with said protrusion 16' which, advantageously, defines the bayonet-operated coupling 16 within the longitudinal channel 14 obtained respectively in the first 4 or in the second base 4'.

[0037] Preferably, in correspondence with its rear wall 9', the first and/or second support element 8, 8' is provided with said substantially hammer-shaped protrusion 16', defining the bayonet coupling 16, which is intended to be inserted into the longitudinal channel 14 which is suitably counter-shaped with respect to said protrusion.

[0038] In particular, said longitudinal channel 14 is longitudinally formed on at least one internal surface 17 (ie intended to be turned towards the foot 6) of the first base 4 and/or of the second base 4' respectively. Conveniently, the channel 14 is defined by a groove 22 obtained on a surface of said base 4 and/or 4'.

[0039] Conveniently, the hammer-like protrusion 16' is defined by an outermost part 20 which is connected to the rear wall 9' of the first and/or second support element 8, 8' by a neck 18. In particular, the coupling between the the first support element 8 and the first base 4 takes place according to traditional methods by inserting the protrusion 16' inside

the channel 14 so that the outermost part 20 of the latter is initially parallel to the direction of development of the channel 14 itself. Subsequently, the first support element 8 is made to rotate by about 90° - in particular it is made to rotate by about 90° around the development axis of the neck 18 - so that the hammer-like undercut portions of the protrusion 16' go into abutment on the corresponding counter-shaped edges 24 of the channel 14, thus preventing/blocking the extraction of the first support element 8 from the first base 4. Conveniently, the coupling of the second support element 8' and the second base 4' can occur with the same modes just described above.

[0040] Advantageously, at the rear wall 9' of the first support element 8 (and advantageously also of the second support element 8'), at least one, and preferably at least two reliefs 21, can be provided, which are intended to cooperate with the internal surface 17 of the first base 4, for the main purpose of opposing the relative sliding of the first support element 8 within the channel 14, once said first element has been inserted and rotated inside said channel.

[0041] Advantageously, the two walls 9 and 9' have different shapes and sizes.

[0042] Advantageously, the connecting element 3 comprising a profile with two portions 31, 31' arranged in an "L" shape in which corresponding ends of the bases 4, 4' are intended to abut frontally respectively with the first 31 and the second portion 31' of the connecting element 3. Preferably, the two portions 31, 31' are substantially orthogonal to each other.

[0043] Conveniently, the second portion 31' of the profiled element, the smaller one, has a folded free longitudinal edge 35 so as to define a fin which is substantially parallel to the first portion 31, the greater one, of the profiled element itself. Furthermore, the other edge of the second portion 31' extends beyond the first portion 31 defining a longitudinal shoulder 36 which is orthogonal to the latter.

[0044] Advantageously, the profile that defines the connecting element 3 is dimensioned so that the distance between the facing surfaces of the folded edge 35 and of the first portion 31 substantially corresponds to the thickness of the end of the base 4.

[0045] Furthermore, at least the first connecting element support 8 advantageously comprises first cooperation means 23 which are intended to cooperate, as will become clearer below, with corresponding second cooperation means 32 provided in the first portion 31 of the connecting element 3 in order to oppose the relative sliding along said first base 4, between the first support element 8 and the connecting element 3.

[0046] Advantageously, on the side of the longitudinal shoulder 36 and in correspondence with its terminal portion 37, the first portion 31 is affected by the second cooperation means 32 which are designed to cooperate with the first means 23 of the first support element 8.

[0047] Conveniently, the first cooperation means 23 of the first support element 8, which cooperate with the second cooperation means 32 of the connecting element 3, have a surface profile substantially complementary to each other.

[0048] Preferably, these first cooperation means 23 comprise a plurality of semicircular grooves 38, parallel to each other which, in use, are substantially vertical.

[0049] Conveniently, the first means 23 of the first support element 8 have a surface profile complementary to that of the second means 32 of the connecting element 3.

[0050] In accordance with the preferential embodiment of the present invention, illustrated in the attached figures, the first cooperation means 23 of the first support element 8 which cooperate with the second cooperation means 32 are configured so as to increase the friction resulting from the contact and/or sliding between the connecting element 3 and the first support element 8. Advantageously, the first support element 8 comprises a rear wall 9' on which the first cooperation means 23 are defined which are intended to cooperate with the second cooperation means 32 which, preferably, are formed on the terminal portion 37 of the first portion 31 of the section that defines the connecting element 3.

[0051] Advantageously, the first cooperation means 23 are obtained on a face, for example on the rear face (as shown in the figures), of at least one lateral extension 62 of the rear wall 9' of the support element 8. Preferably, two lateral extensions 62 are provided, to thus allow the same support element 8 to cooperate with a connecting element 3 positioned both to its right and to its left. In particular, the lateral extensions 62 are positioned laterally with respect to the central zone 61 in correspondence with which the bayonet coupling 16 is obtained/provided. Preferably, the lateral extensions 62 are offset (ie parallel and not coplanar) with respect to the central zone 61.

in order to allow the coupling between the support element 8 and the connecting element 3, the rear wall 9' of the first support element 8 on which are formed the first cooperation means 23 defines a concavity and/or is slightly offset with respect to the adjacent part (for example to the central zone 61) or the remaining part of said wall, to thus delimit with the first base 4 a loop for the stable insertion of the terminal portion 37 of the first portion 31 of the connecting element 3 on which the second cooperation means 32 are obtained.

[0052] Conveniently, in an embodiment not shown here, the terminal portion 37 provided with the second cooperation means 32 can be offset with respect to the remaining part of the first portion 31 of the connecting element 3 so that, once the latter has been associated with the base 4, the terminal portion 37 delimits with the base itself a loop for the insertion of the part (ie the lateral extension 62) of the rear wall 9' of the support element 8 on which the first cooperation means 23 are made and which, in this case, is coplanar with the remaining part of the body of the plate 10 Furthermore, suitably, in this case, the first cooperation means 23 are obtained on the front face of the rear wall 9'.

[0053] As anticipated above, the first cooperation means 23 preferably comprise a first succession of grooves 38 which are intended to engage in shape relationship with corresponding second ribs 39 of the second cooperation means 32.

[0054] Preferably, the second cooperation means 32 comprise a plurality of protruding ribs 39, vertical and parallel to each other suitable to be inserted inside the grooves 38 of the first cooperation means 23.

[0055] Obviously, the first and second cooperation means 23, 32 may include any type of surface finish and/or protruding and/or recessed element suitable for defining said shape ratio to thus mechanically engage the connecting element 3 to the first support element 8. In particular, it is understood that the first cooperation means 23 of the first support element 8 which are designed to cooperate with corresponding second cooperation means 32 of the connecting element 3 in order to control stopping the relative sliding between said first element 8 and said connecting element 3 can comprise other traditional types of interaction and/or mechanical coupling between two elements, such as for example means and counter-means for achieving a coupling by hooking, or by interlocking (for example of the male-female type), or by clamping, by interference, by coupling - even partial - of shape, etc.

[0056] Conveniently, the end of the first base 4 is intended to abut frontally with the second portion 31' of the connecting element 3 and to be retained laterally between a folded longitudinal edge 35 of the second portion 31' and the first portion 31 of the connecting element 3, and the end of the second base 4' is intended to abut frontally with the first portion 31 of said connecting element 3.

[0057] Advantageously, the first support element 8 (and advantageously also the second supporting element support 8') comprises a seat 26 for said magnet 10. Conveniently, the seat 26 can be defined between the two walls 9, 9' of the first support element 8 and, preferably, is defined within the thickness of the support element 8. Conveniently, the seat 26 is closed by the rear wall 9' of the first support element 8 while it is open at its front wall 9. Preferably, the seat 26 is configured for c to feel the easy, quick and removable insertion - and/or extraction - of the first magnet 10.

[0058] Preferably, in a possible embodiment (cf. fig. 27 and 28), the seat 26 is oversized - in particular in width (see spaces 48) but could also be so in terms of thickness - compared to the first magnet 10. Conveniently, for this purpose, the stable housing of the first magnet 10 inside the seat 26 it is made by suitable filling or adhesive means. Advantageously, in this way, magnets of different sizes and/or shapes can be inserted and housed within the seat 26.

[0059] Preferably, in another possible embodiment, the seat 26 can be configured to prevent the movement of the magnet 10 with respect to two directions which are perpendicular to each other and are also perpendicular to the direction of insertion/extraction of the magnet 10 within the seat 26.

[0060] Conveniently, the seat 26 can be delimited by the rear wall 9', by a containment edge 25 obtained in correspondence with the front wall 9 and by lateral connecting walls 11 which are interposed between said two faces and which extend substantially perpendicularly between these. Advantageously, the front/external face of the magnet 10 is partially retained by the containment edge 25 even though it is for the most part free and/or uncovered, to thus allow its magnetic coupling with the hooking element 12, as will be clearer in following.

[0061] Conveniently, the seat 26 can have a conformation which substantially corresponds - at least in part - to that of the first magnet 10. Advantageously, the seat 26 can comprise, on the surface of the rear wall 9' which is intended to face towards the magnet 10, ribs 26' which are intended to cooperate with the rear/internal face of the magnet 10 in order to prevent the extraction of the magnet 10 once it has been inserted into said seat. Advantageously, in the zone 49 defined between the ribs 26' a suitable filler or adhesive can be inserted inside the seat 26, to thus allow the stable locking of the first magnet 10 within said seat.

[0062] Conveniently, the seat 26 - in addition to being open in correspondence with the front wall 9 which is intended to face the foot 6 to be associated with the base 4 - is also open in the direction of insertion/removal of the first magnet 10 in/from the seat itself.

[0063] Advantageously, the first magnet 10 is substantially a magnet. Conveniently, the first magnet 10 has a disk or cylindrical shape, but it could also have the shape of a prism with a polygonal base or a truncated or truncated pyramid shape. Correspondingly, the seat 26 defined in the first support element 8 can be shaped to allow a stable positioning of the magnet 10 which is mounted/supported in/by said element. Conveniently, the magnet 10 is configured to generate a magnetic field suitable for allowing a stable coupling of the first base 4 to the foot 6, while allowing its easy removal, as will become clear later.

[0064] The first support element 8 (and preferably also the second support element 8') comprises at least a pair of gripping portions 33, 33' configured to allow them to be gripped, respectively with the thumb and with another finger of the same hand, by part of a user, to thus facilitate the rotation of the first support element 8 in order to activate said bayonet coupling 16, once said coupling has been suitably and previously inserted into the channel 14 of the base 4.

[0065] Advantageously, the gripping portions 33, 33' are defined respectively on mutually opposite sides of the first support element 8 and are offset from each other in height, thus making the grip of the support element 8 particularly ergonomic in order to cause its locking rotation.

[0066] Conveniently, said gripping portions 33, 33' can be defined on the support element 8 so that one gripping portion 33 receives the user's thumb in support, while the other gripping portion 33' receives in support another finger (and in

particular the index or middle finger) of the same hand of said user. Advantageously, this arrangement facilitates gripping and rotation of the support element 8 around the axis of rotation which crosses the protrusion 16'.

[0067] Conveniently, said gripping portions 33, 33' can be defined on said support element 8 in diametrically opposite positions with respect to the center of gravity of the support element itself, which substantially corresponds to the point crossed by the axis around which said support element 8 wheel. In particular, the two gripping portions 33, 33' are defined on said support element 8 in diametrically opposite positions with respect to the protrusion 16', and in particular with respect to the point where the neck 18 of the protrusion 16' connects to the rear wall 9' of the support element 8.

[0068] Advantageously, the gripping portions 33, 33' are defined on said support element 8 in diametrically opposite positions with respect to the magnet 10.

[0069] Preferably, said gripping portions 33, 33' are obtained by means of concave portions or grooves obtained on one (preferably the front wall 9) or on both the two walls of the support element 8. In particular, a first groove - which defines the first gripping portion 33 - can be obtained on the front wall 9 of the support element 8, while a second recess - which defines the other gripping portion 33' - is formed on both walls 9, 9' of the support element.

[0070] Conveniently, in correspondence with said recesses, transverse walls 19 can be provided to define a support, advantageously wider - for the corresponding finger of the user.

[0071] Conveniently, in a first possible embodiment (see fig. 20 - 22), the hooking element 12 substantially comprises a fork hook configured to detachably embrace/engage the shaft 13 of the foot 6. In particular, this hooking element 12 comprises two arms 27, 27' angled to each other, which surround and elastically and partially embrace the shaft 13 of the foot 6. Preferably, the arms 27, 27' are directly connected to each other so as to confer on the hooking element 12 an overall "L" or "V" shape, preferably with two sections of the same length. In particular, the arms 27, 27' define an angle α between them, preferably having an amplitude substantially equal to or less than about 90°.

[0072] Conveniently, the two arms 27, 27' have a laminar conformation. Conveniently, the two arms 27, 27' have substantially the same length, which for example can be slightly greater than the diameter of the shaft 13 of the foot 6 to which the hooking element 12 is intended to be hooked. Preferably, the joint/bend between the two arms 27, 27' can be angled or, preferably, it can be slightly rounded.

[0073] Advantageously, the hooking element 12 is made - preferably entirely - of magnetic metal material, and preferably of ferromagnetic material, and in particular it can be made of iron. Conveniently, the two arms 27, 27' are made at least in part - preferably entirely - in magnetic metallic material, preferably in ferromagnetic material. Conveniently, at least the outer surface of the two arms 27, 27' is made of magnetic metal material, preferably of ferromagnetic material.

[0074] Advantageously, said hooking element 12 can be made of folded sheet of magnetic metal, preferably ferromagnetic. Preferably, the hooking element 12 is defined entirely and only by a single folded sheet of a magnetic metal.

[0075] Advantageously, the two arms 27 of the hooking element 12 can be made of polymeric material and, in this case, said hooking element 12 can comprise plates of magnetic metal material, and preferably of ferromagnetic material, which are fixed (for example by means of bonding) to the external surfaces of said two arms 27.

[0076] Conveniently, the hooking element 12 is configured in such a way as to allow an elastic variation of the mutual distance between the two arms 27, 27', in particular to allow them to surround and then embrace/hook the shaft 17 of the foot 6. Conveniently, for this purpose, one or both of the arms 27, 27' are elastic, at least in correspondence with the fold for their connection.

[0077] Conveniently, the hooking element 12 is configured so that, once the shaft 13 of the foot 6 has been embraced, it can then be translated vertically - maintaining said embrace - along the height of the foot itself.

[0078] Conveniently, one or both of the arms 27, 27' have a greater length, preferably much greater, than the dimensions of the magnet 10 mounted in the seat 26 of the support element 8, thus allowing to correct, even after joining the base 4 to the foot 6, a possible positioning error simply by translating the base to the right or left, since the magnetic link between the magnet 10 mounted on the support element 8, in turn mounted on the base 4, remains active for the entire length development of the arms 27, 27' of the hooking element 12 mounted on the foot 6.

[0079] Advantageously, at least one of the two arms 27, 27' has at least one of the two edges with a profile shaped so as to define a section hollowed inwards in correspondence and/or proximity of the connecting bend between said two arms.

[0080] Conveniently, the recessed portion 29 is formed in such a way that the width of the arm 27 and/or 27', in correspondence with and/or near the end of connection with the other arm, is smaller than the width of the arm itself at the free end.

[0081] Advantageously, in this way, when the hooking element 12 is applied and embraces/engages the foot 6, it is possible to insert - preferably from top to bottom - a tool 52 (for example an Allen key or a screwdriver) into the space between the foot itself and the arm 27 and/or 27', to make it then come out at the edge provided with the recessed portions 29.

[0082] Advantageously, at each free end of the arms 27, 27' of the hooking element 12, curved portions 28 and 28' are provided, which are substantially folded backwards and inwards. Conveniently, said bending can form an acute angle with the corresponding arm 27, 27' of the hooking element 12.

[0083] Preferably, furthermore, the curved portions 28 and 28' each terminate with one of the further curved portions, respectively 30 and 30'. In particular, said further curved portions 30, 30', which with the respective curved portions 28, 28' define an obtuse angle and which are configured to abut against the shaft 17 of the foot 6.

[0084] Conveniently, the bends at the corner between the two arms 27, 27' and/or at the angles between each arm 27, 27' and the corresponding curved section 28, 28' and/or at the angles Ω between each curved section 28, 28' and the corresponding further curved section 30, 30' give the hooking element 12 a suitable elasticity to allow it to deform so as to stably surround, embrace and hook the foot 6.

[0085] Conveniently, in another possible and preferred embodiment illustrated in figures 29 - 41, the hooking element 12 comprises:

- a fork hook 50, made of polymeric material, which is configured to removably engage the shaft 13 of the foot 6,
- at least one body 60 in magnetic metal material, preferably in ferromagnetic material, which is fixed to or incorporated in said fork hook 50, for the magnetic connection with the magnet 10 or 10' of the support element 8 or 8'.

[0086] In particular, this fork hook 50 comprises two elastic fins 51 which surround and externally embrace, at least in part, the shaft 13 of the foot 6. Preferably, the elastic fins 51 are shaped in such a way as to delimit a first area 52, intended to engage and embrace the shaft of said foot, and a second flared area 53 adapted to favor said engagement. Preferably, the elastic fins 51 are shaped and joined together so as to externally embrace the foot 6, in particular by coming into contact with the surface of the shaft 13 of the foot itself, for a greater extension with respect to the semicircumference of said shaft. Conveniently, the fork hook 50 is configured so that, when the hooking element 12 is associated with the shaft 13 of the foot 6, the internal surface of the elastic fins 51 and of their connecting portion 55 wraps around and is in contact with several half of the circumference of the shaft 13 of the foot 6. In substance, the first area 52 of the fork hook 50 wraps more than half of the circumferential extension of the stem of the foot 6.

[0087] Furthermore, also the connecting portion 55 between the fins 51 is curved and, preferably, has the same radius of curvature as the respective parts 56 of the fins 51 which define the first area 52. Conveniently, the connecting portion 55 between the fins 51 is also configured to come into contact with the shaft 13 of the foot, in particular so that the latter is continuously wound between the two parts 56 which define the first area 52 and the connecting portion 55 interposed between said two parts.

[0088] In particular, the fork hook 50 is made of thermoplastic polymeric material.

[0089] Preferably, in correspondence with the external surface (ie the opposite surface with respect to that which comes into contact with the shaft 13 of the foot 6) of the elastic fins 51 and/or their connecting portion 55, the fork hook 50 can comprise at least one portion 54 on which the body 60 in magnetic metal material is fixed or incorporated. Conveniently, the body 60 is fixed or incorporated in a corresponding portion 54 of the fork hook 50 so that the external surface remains visible at least in part or preferably for the most part, to thus allow the magnetic connection of said body 60 with the magnet 10 or 10' of the support element 8 or 8'.

[0090] Advantageously, each portion 54 is defined by a flat wall which is formed in a single body with the elastic fins 51 or with the connecting portion 55 interposed between them.

[0091] Conveniently, in the embodiment shown, a corresponding portion 54 is provided on each elastic fin 51 and, therefore, the fork hook 50 comprises two portions 54 which are angled to each other, and preferably are orthogonal to each other.

[0092] Conveniently, in a possible variant embodiment not shown here, the fork hook 50 can be provided with a single portion 54 which is obtained substantially in a facing position with respect to the flared area 53 which is defined between the free ends 58 of the elastic fins 51.

[0093] Conveniently, said body 60 made of magnetic metal material has a laminar conformation (ie the thickness is lower, in particular much lower, with respect to the other two dimensions) and, preferably, it is a washer or disk.

[0094] Advantageously, the body 60 in magnetic metal material is co-molded or over-molded with the fork hook 50. In particular, the body 60 in magnetic metal material is incorporated in the fork hook 50 directly during the molding phase, thus obtaining the union and the bonding between these two components of different material.

[0095] Advantageously, the hooking element 12 also comprises a further mechanical locking/fixing means 57 of the body 60 to the fork hook 50, to thus better guarantee the tightness of the union of the body 60 to the fork hook 50. Preferably, this further locking means 57 is shaped like a crown which is fixed to the fork hook 50 and which protrudes radially so as to act on a part of the external face of the body 60. Preferably, this further locking means 57 is also made of polymeric material and is made by overmoulding with the fork hook 50 and the body 60.

[0096] Conveniently, when the hooking element 12 is brought close to the foot 6, by applying an appropriate pressure, the elastic fins 51 of the hook 50 are elastically deformed to allow them to embrace and wind the corresponding foot 6 (see fig. 32a - 32c). In particular, in this way, the shaft 13 of the foot 6 enters the first area 52 of the fork hook 50, an area which is delimited by the parts 56 of the elastic fins 51 and by the connecting portion 55 interposed between said fins.

[0097] The present invention also relates to a support element 8, 8' to be used for joining at least one base 4, 4' to a

foot 6 of a piece of furniture or the like, in particular intended to form part of a set of elements of the fin type described here and of which the same numerical references will be kept for simplicity of explanation.

[0098] The support element according to the invention is configured to support a magnet 10, 10', which is configured to be magnetically connected to a part made of ferromagnetic material of a hooking element 12 which is associated with the aforementioned foot 6.

[0099] Furthermore, the support element 8, 8' is configured to be associated with said base 4, 4' and to be connected to a connecting element 3 intended to be arranged in correspondence with a contact area between a first base 4 and a second base 4'.

[0100] Advantageously, in the variant of figs. 6 and 7, as well as in the variant of figs. 16-19, the support element 8 is configured to be removably associated with the base 4 and, preferably, for this purpose, is provided with said bayonet coupling 16.

[0101] Advantageously, in a further variant of the support element 8, such as the one represented in figs. 24-26, the support element 8 is configured to be associated with the base 4 by means of dedicated fastening members, and in particular by means of screws. Conveniently, this variant of the support element 8 is suitable for use with base 4 made of chipboard or similar materials. In particular, in this embodiment variant, no bayonet coupling 16 or other rear protrusion is provided on the rear wall, while through holes 65 are provided in correspondence with the rear wall 9' for passing through fastening members (such as for example self-tapping screws, not shown) of the support element 8 to the base 4.

[0102] Advantageously, the support element 8, 8' can comprise first cooperation means 23 which are configured to cooperate with second cooperation means 32 provided in the first portion 31 of said connecting element 3 in order to oppose the relative sliding - along the base 4, 4' to which the support element is associated - between the same support element 8, 8' and said connecting element 3 and/or to maintain said connecting element 3 associated with said base 4.

[0103] More in detail, preferably, the support element 8, 8' comprises a rear wall 9' on which are defined first cooperation means 23 which are intended to cooperate with second cooperation means 32 obtained on a first portion 31 of a profile which defines the connecting element 3.

[0104] Preferably, said support element 8, 8' is provided with a bayonet coupling 16 to associate the support element with the base 4.

[0105] Advantageously, moreover, on said support element 8, 8' are defined a pair of gripping portions 33, 33' configured to allow gripping by a user respectively with the thumb and another finger of the same hand, in order to facilitate the rotation of said support element 8, 8' in order to activate said bayonet coupling. Preferably, said gripping portions 33, 33' are defined respectively on mutually opposite sides of said support element 8, 8' and are offset from each other in height, thus making gripping of the support element 8, 8' particularly ergonomic in order to cause its rotation for the activation of the bayonet coupling.

[0106] Advantageously, said gripping portions 33, 33' can be defined on said support element 8, 8' so that one gripping portion 33 rests on the thumb finger of the user's hand, while the other gripping portion 33' receives in support the index or middle finger of the same hand of said user. Preferably, said gripping portions 33, 33' are defined on said support element 8, 8' in diametrically opposite positions with respect to the center of gravity of the support element itself. Preferably, said gripping portions 33, 33' are defined on said support element 8, 8' in diametrically opposite positions with respect to the point crossed by the axis around which said support element 8, 8' rotates, once it has been mounted on said base 4.

[0107] Advantageously, said support element 8, 8' is made of polymeric materials, preferably plastic, or other non-magnetic material.

[0108] Advantageously, said support element 8, 8' comprises a plate with a front wall 9, intended to be turned towards the foot 6 in use, and a rear wall 9' intended to be turned towards said base 4 when in use condition.

[0109] Advantageously, said support element 8, 8' comprises a seat 26 for said magnet 10, and said seat is defined between the two walls 9, 9' of the support element 8, 8' and inside the thickness of said support element 8, 8', said seat 26 being closed by the rear wall 9' of the support element 8 while it is open at its front wall 9.

[0110] Preferably, in a possible embodiment (see fig. 27 and 28), the seat 26 is oversized - in particular in width (see spaces 48) but could also be so in terms of thickness - compared to the first magnet 10. Conveniently, for this purpose, the stable housing of the first magnet 10 within the seat 26 is realized by means of suitable filling or adhesive means. Advantageously, in this way, magnets of different sizes and/or shapes can be inserted and housed within the seat 26.

[0111] Advantageously, in a possible and preferred embodiment, said support element 8, 8' is configured so that the seat 26 for said magnet 10 substantially prevents the magnet 10 from moving with respect to two directions Y, Z which are perpendicular to each other and also they are both perpendicular to the direction X of insertion/extraction of the magnet within said seat 26.

[0112] Advantageously, said gripping portions 33, 33' are defined on said support element 8 in diametrically opposite positions with respect to a seat 26, defined in said support element 8, for the insertion and housing of said magnet 10.

[0113] Advantageously, said gripping portions 33, 33' are obtained by means of recesses 34, 34' obtained only on the front wall 9 of said support element 8, 8'. Preferably, said gripping portions 33, 33' are obtained by means of recesses 34, 34' obtained on both walls 9, 9' of said support element 8, 8'.

[0114] Advantageously, said support element 8, 8' comprises a first recess 34 which defines the first gripping portion 33 which is obtained only on the front wall 9 of the support element 8, while a second recess 34' which defines the other gripping portion 33' is obtained on both walls 9, 9' of the support element 8. Preferably, in correspondence with said recesses 34, 34', transverse walls 19 are provided, formed between the front wall 9 and the rear wall 9' of said support element 8, 8', to thus define a wider support for the corresponding finger of the user's hand.

[0115] Advantageously, said two walls of the support element 8, 8' have different shapes and dimensions. Preferably, said recess 34, 34' defining said gripping portion 33, 33' is obtained only on the front wall 9, while the corresponding area of the rear wall 9', which faces said recess 34, 34', is substantially full.

[0116] A method for assembling the assembly and the support element described up to now, both of which are the object of the present invention, is also described below.

[0117] The mode of operation of the assembly 2 of elements for joining the bases of a piece of furniture or the like is clear from the description of the same.

[0118] In particular, first the first support element 8 - with the magnet 10 already inserted in the seat 26 - is applied to the first base 4, appropriately inserting the protrusion 16' into the longitudinal channel 14 obtained in the base itself. Subsequently, the support element 8 is made to slide along the channel of the base 4 so as to distance it from the end of the latter and thus bring it approximately (ie "by eye" and with a good margin of tolerance) in the desired position, which is suitably aligned/facing the foot 6 of the piece of furniture to which the first base 4 is intended to be joined. Then, once the desired position has been approximately reached, the user places the thumb finger of the hand on a gripping portion 33 of the first support element 8 and another finger of the same hand on the other gripping portion 33' to rotate thus the support element 8 easily by 90° inside the channel 14 of the base 4. In essence, the configuration and arrangement of the gripping portions 33, 33' of the support element 8 facilitates the activation of the bayonet coupling 16 of said support element 8 on the base 4, to thus associate the support element 8 with the base 4.

[0119] Conveniently, it is understood that the magnet 10 can be inserted in the seat 26 of the support element 8 before or after the assembly and/or locking of the latter on the base 4.

[0120] Advantageously, the above operating steps are to be repeated identically, mutatis mutandis, to connect the second support element 8' to the second base 4'.

[0121] Before or after the aforesaid operation carried out on the base 4, the hooking element 12 is applied to the foot 6. In particular, by applying an appropriate pressure, the arms 27, 27' or the fins 51 of the hooking element 12 are elastically deformed to allow them to be hooked to the corresponding foot 6.

[0122] Conveniently, the hooking element 12 is applied to the foot 6, and/or subsequently rotated with respect to this, so that the external face of at least one of the two arms 27, 27' or the portion 54 with the body 60 of at least one of the elastic fins 51 of said element faces, oriented and substantially parallel to the corresponding first base 4 or second base 4' to be joined. In the case in question, the foot is of the angled type and the two arms 27, 27' or the two portions 54 with their respective bodies 60 are advantageously angled to each other in order to be both parallel and to two bases 4, 4' which will be associated with two corresponding and distinct sides of the cabinet.

[0123] Then, the base 4 thus prepared is brought close to the hooking element 12 so that the magnetic attraction between the magnet 10, which is mounted in the support element 8 fixed to the base 4, and the arm 27 or 27' of the hooking element 12 in magnetic metal, preferably ferromagnetic, which is coupled to the foot 6, thus allows to attach/join the socket to said foot, and also to maintain this union/attachment stably. Advantageously, the magnet 10 of the support element 8 mounted on the base 4 is attracted by the arm 27 or 27' of the hooking element 12 along the entire extension of the corresponding arm, and therefore a particularly accurate and precise positioning of the the support element 8 itself along the base 4.

[0124] Conveniently, using the hooking element 12 of the embodiment illustrated in figures 32a and following, the previously prepared base 4 is brought close to the hooking element 12 so that the attraction between the magnet 10, which is mounted in the support element 8 fixed to the base 4, and the magnetic metal body 60, preferably ferromagnetic, which is incorporated in the fork hook 50 of the hooking element 12 associated with the foot 6, thus allows to attach/join the socket to said foot, and also to maintain this union/attachment stably. Advantageously, the magnet 10 of the support element 8 mounted on the base 4 is attracted to the body 60 incorporated in the hooking element 12.

[0125] It is conveniently understood that the fork hook 50 of the hooking element 12 can be fixed/glued or incorporated even a single body 60 in magnetic metal, preferably ferromagnetic, for example to associate a central and intermediate (ie not extremal) portion of the base 4 with the foot 6.

[0126] Subsequently, the connecting element 3 is applied in correspondence with a joining area between the first and second base 4, 4', in particular on the end of the first base 4 so that the leading edge 42 strikes frontally with the base of the second portion 31', while it is held laterally between the longitudinal folded edge 35 and the first portion 31.

[0127] Subsequently, the first support element 8 is made to slide towards the connecting element 3, until the rear wall 9' of the first and support element 8 intercepts the terminal portion 37 of the first portion 31 of the connecting element 3. In particular, in doing so, the first cooperation means 23 and the second cooperation means 32 interact with each other, regulating the positioning of the first connection element support 8 on the connecting element 3 and blocking any

possible involuntary sliding of the first support element 8 with respect to the connecting element 3.

[0128] Advantageously, the fact that the first cooperation means 23 and the second cooperation means 32 consist of grooves 38 and by vertical ribs 39, it allows to adjust for successive clicks the sliding of the first element 6 on the second element 8.

[0129] Conveniently, it is understood that the second base 4' intended to define the junction (i.e. the one to which the first support element is not bound 8 and the connecting element 3) can be associated/constrained to the furniture foot 6 by means of a corresponding (second) support element or 8' which has the same constructive and functional characteristics as the first support element 8 of the assembly 2, or by means of any other traditional coupling element or device.

[0130] Conveniently, it is understood that, according to a further variant of the present invention, in the support element 8 or 8', instead of the magnet 10 or 10', a magnetic metal body, preferably ferromagnetic, can be provided, while the magnetic part/magnetized can be mounted/provided in the hooking element 12, preferably in place of the body 60 described above.

[0131] The set of elements 2 according to the invention is particularly advantageous with respect to the traditional ones in that:

- allows a simple and quick assembly and locking of the support elements to the respective bases and at the same time allows a quick and simple connection to a connecting element,
- it can also be used with bases that are made/cut in an imprecise way since it is sufficient for their leading edge to lean frontally (i.e. without the need for any insertion) on the connecting element, hiding any imperfections
- the adjustment during assembly is extremely simple since it only requires sliding the first support element with respect to the connecting element so that the connecting means are aligned with the foot to which both the junction bases must be constrained;
- in particular, the simplicity of assembly reduces the intervention times of the professional installer, at the time of the first installation, as well as facilitates the interventions of temporary removal and subsequent reapplication of the bases which are generally carried out by the user in order to access, for example to carry out cleaning, to the space enclosed between the hooves themselves,
- it is not necessary that the support element be mounted in a particularly precise and accurate way and furthermore, the ergonomic shape of the support element facilitates the locking rotation of the same element on the base,
- allows you to correct any positioning errors simply by moving the base sideways, without detaching it from the foot,
- it allows a simple and quick association of the base to the piece of furniture; in particular, once the support element and the coupling element have been mounted respectively on the base and on the foot, it is sufficient to bring the base to the furniture foot,
- it is economical since it consists of a small number of components that can easily be mass-produced.

[0132] The present invention has been illustrated in some of its preferred embodiments, but it is understood that executive variations may be made in practice, without however departing from the scope of protection of the present patent for industrial invention.

Claims

1. Set (2) of improved elements for joining at least one base (4, 4') to the foot (6) of a piece of furniture or the like, **characterized in that** it comprises:

- at least one support element (8, 8') for a magnet (10, 10'), or for a magnetic metal part, preferably ferromagnetic, said at least one support element (8, 8') being configured to be removably associated with said base (4, 4'), said at least one support element (8, 8') being provided with a shaped protrusion (16') configured to be inserted and then rotated inside a channel (14) obtained in said base (4, 4'),
- a hooking element (12) which is configured to be removably associated with said foot (6) of said piece of furniture, or the like, so as to hook onto the shaft (17) of said foot (6), said hooking element (12) comprising at least a part (27, 27', 60) in magnetic metal material, preferably ferromagnetic, or a magnet, to allow the magnetic connection with said magnet (10), or with said magnetic metal part, which is mounted on said at least one support element (8, 8'), and thus allowing the union of said base (4, 4') to said foot (6),

and also **characterized by** the fact that:

- on said at least one support element (8, 8') there are defined a pair of gripping portions (33, 33') configured to allow gripping by a user respectively with the thumb and another finger of the same hand, in order to facilitate

the rotation of said shaped protrusion (16') of said at least one support element (8, 8') inside the channel (14) obtained in said base (4, 4').

2. Assembly (2) of elements according to claim 1 for joining at least a first base (4) and a second base (4') to a foot (6) of a piece of furniture or the like, **characterized in that** said at least one support element (8, 8') comprises first cooperation means (23) configured to cooperate with corresponding second cooperation means (32) provided in a connecting element (3) which is intended to be arranged in correspondence with an area of contact between said first base (4) and said second base (4').

3. Set of elements according to one or more of the preceding claims, to be used for joining at least a first base (4) and a second base (4') to a foot (6) of a piece of furniture or the like, **characterized in that** it comprises:

- said hooking element (12),
- a first support element (8) for a first magnet (10), or for a magnetic metal part, preferably ferromagnetic, which is configured to be magnetically connected to said hooking element (12), said first support element (8) being configured to be associated with said first base (4),
- a second support element (8') for a second magnet (10'), or for a magnetic metal part, preferably ferromagnetic, which is configured to be magnetically connected to the same hooking element (12) to which it is intended to be magnetically connected to said first support element (8), said second support element (8') being configured to be associated with said second base (4') intended to be positioned at an angle with respect to said first base (4), preferably orthogonal with respect to said first base (4');
- a connecting element (3) intended to be arranged in correspondence with a contact area between said first base (4) and said second base (4'),

and also **characterized in that** said first support element (8) and/or said second support element (8') comprises first cooperation means (23) configured to cooperate with corresponding second cooperation means (32) provided in said connecting element (3).

4. Complex according to claims 2 or 3, **characterized in that**:

- said connecting element (3) comprises a section with two portions (31, 31') arranged in an "L" shape in which corresponding ends of said bases (4, 4') are intended to abut frontally respectively with said first and said second portion of said connecting element (3);
- said first cooperation means (23) are configured to cooperate with said second cooperation means (32) provided in the first portion (31) of said connecting element (3) in order to oppose relative sliding along said first base (4), between said first support element (8) and said connecting element (3) and/or to keep said connecting element (3) associated with said first base (4).

5. Assembly according to one or more of claims 2-4, **characterized in that** the first cooperation means (23) of said first support element (8) and/or second support element (8'), which cooperate with the second cooperation means (32) of said connecting element (3) have a surface profile substantially complementary to each other.

6. Assembly according to one or more of claims 2-5, **characterized in that** said first support element (8) and/or said second support element (8') comprises a rear wall (9') on which said first cooperation means (23) which are configured to cooperate with said second cooperation means (32) obtained on the terminal portion (34) of a first portion (31) of said section which defines said connecting element (3).

7. Complex according to one or more of claims 2-6, **characterized in that**:

- the rear wall (9') of said first support element (8) and/or second support element (8') on which said first cooperation means (23) are formed is configured to define with said first base (4) a loop for the stable insertion of the terminal portion (34) of said first portion (31) of said connecting element (3) on which said second cooperation means (32) are formed, or
- the portion (33) of the first portion (31) of said connecting element (3) provided with the second cooperation means (32) is configured to define with said first base (4) a loop for the stable insertion of the area of the rear wall (9') of said first support element (8) and/or second support element (8') on which said first cooperation means (23) are made.

8. Assembly according to one or more of claims 4-7, **characterized in that** the end of said first base (4) is intended to abut frontally with said second portion (31') of said connecting element (3) and to be retained laterally between a longitudinal folded edge (35) of the second first portion (31') and said second portion (30) of said connecting element (3), and the end of said second base (4') being designed to abut frontally with said first portion (31) of said connecting element (3).

9. Set of elements according to one or more of the preceding claims, **characterized in that** said gripping portions (33, 33') are defined respectively on opposite sides of said at least one support element (8, 8') and are staggered in height, thus making the grip of said support element (8, 8') particularly ergonomic in order to cause the rotation of the shaped protrusion (16') obtained on the rear wall (9') of said support element (8, 8').

10. Assembly of elements according to one or more of the preceding claims, **characterized in that** said at least one support element (8, 8') comprises a plate with a front wall (9), intended to be turned towards the foot (6), and a rear wall (9') intended to be turned towards said base (4, 4') when in use and by the fact that:

- said two walls (9, 9') of the same support element (8, 8') have different shapes and/or dimensions,
- said gripping portions (33, 33') are obtained by means of recesses (34, 34') made on one or both of said walls (9, 9') of said support element (8, 8').

11. Assembly of elements according to one or more of the preceding claims, **characterized in that** said gripping portions (33, 33') are defined on said at least one support element (8, 8') in diametrically opposite positions with respect to the point crossed from the axis around which said support element (8, 8') rotates, once said shaped protrusion (16') has been inserted into the channel (14) obtained on said base (4, 4'), and also diametrically opposite with respect to a seat (26), defined in said support element (8), for the insertion and housing of said magnet (10), or of said magnetic metal body, preferably ferromagnetic.

12. An assembly of elements according to one or more of the preceding claims, **characterized in that** the hooking element (12) comprises two arms (27, 27') angled between them, that surround and embrace at least partially elastically and the shaft (13) foot (6), said arms (27, 27') being directly connected to each other so as to give the hooking element (12) an overall "L" or "V" shape.

13. Assembly of elements according to one or more of the preceding claims, **characterized in that** said hooking element (12) is made entirely and only of folded sheet of ferromagnetic metal, preferably ferromagnetic.

14. An assembly of elements according to one or more of the preceding claims, **characterized in that** said hooking element (12) comprises:

- a fork hook (50) which is made of polymeric material and which is configured to removably engage the shaft (13) of the foot (6),
- at least one body (60) in magnetic metal material, preferably in ferromagnetic material, or a magnetized body, which is fixed or incorporated in said fork hook (50), for the magnetic connection with the magnet (10, 10'), or with the part in magnetic metal material, of the support element (8, 8').

15. Assembly of elements according to the preceding claim, **characterized in that** said body (60) is co-molded or over-molded with the fork hook (50), to thus obtain their fixing.

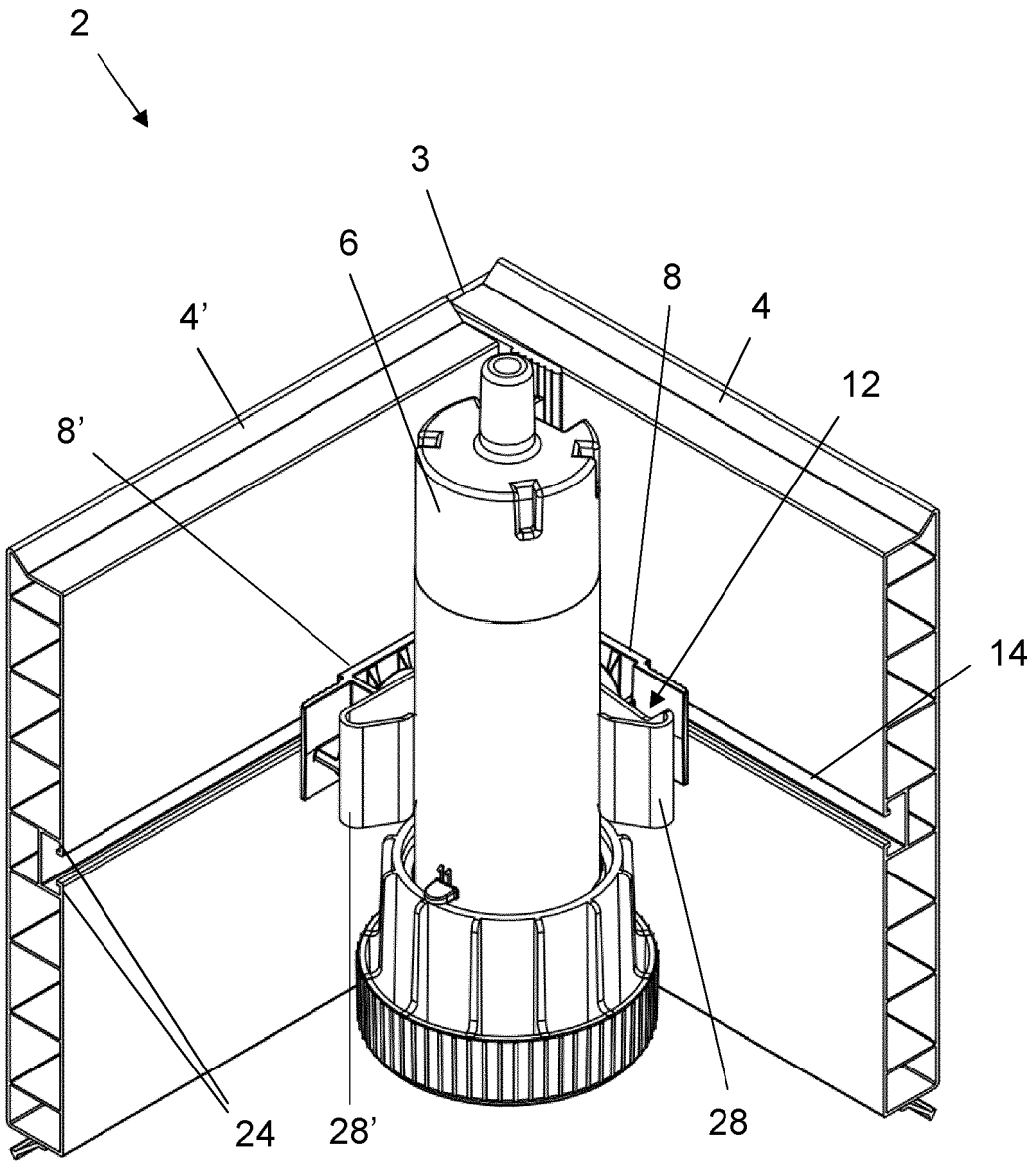


FIG. 1

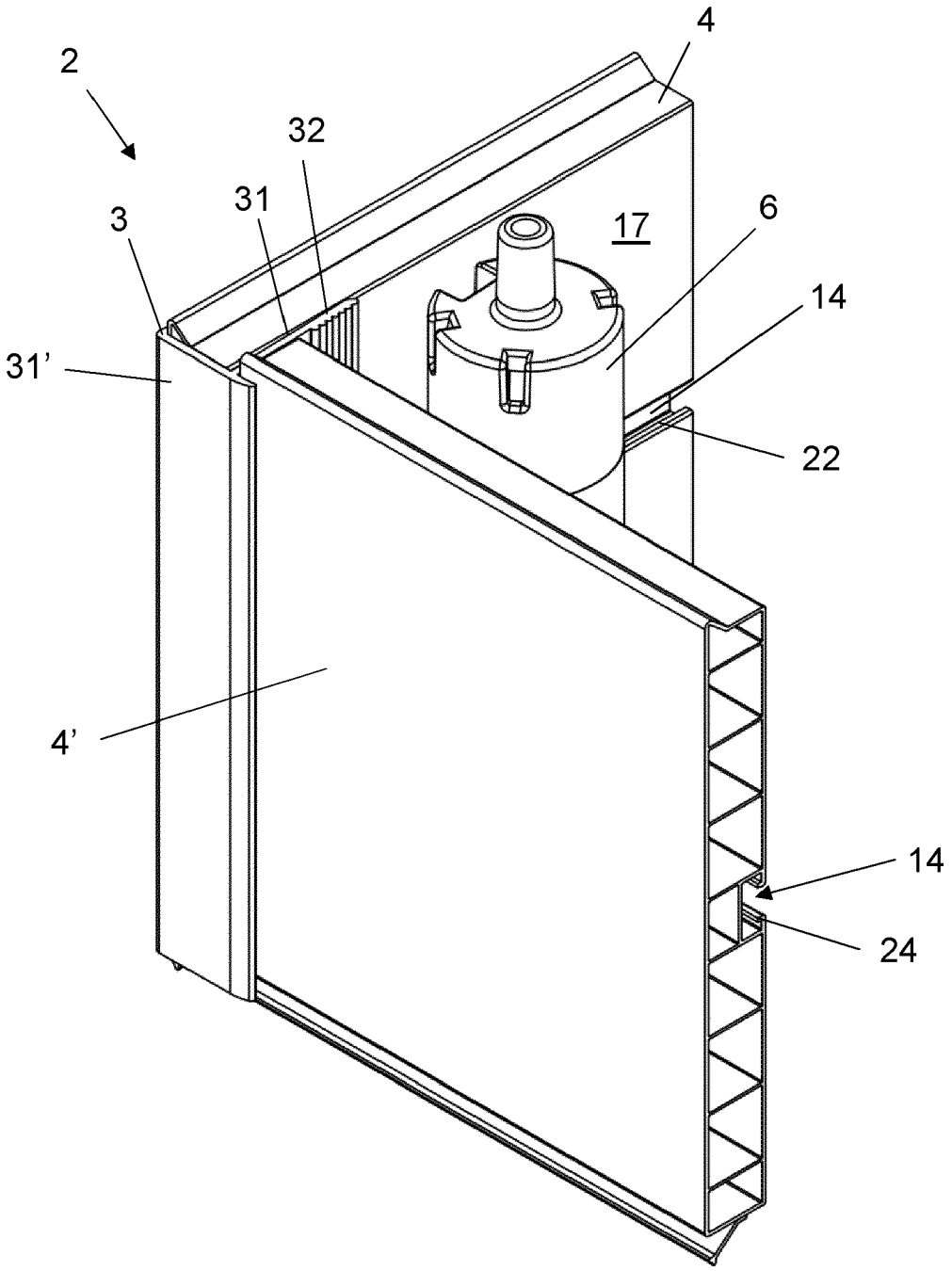


FIG. 2

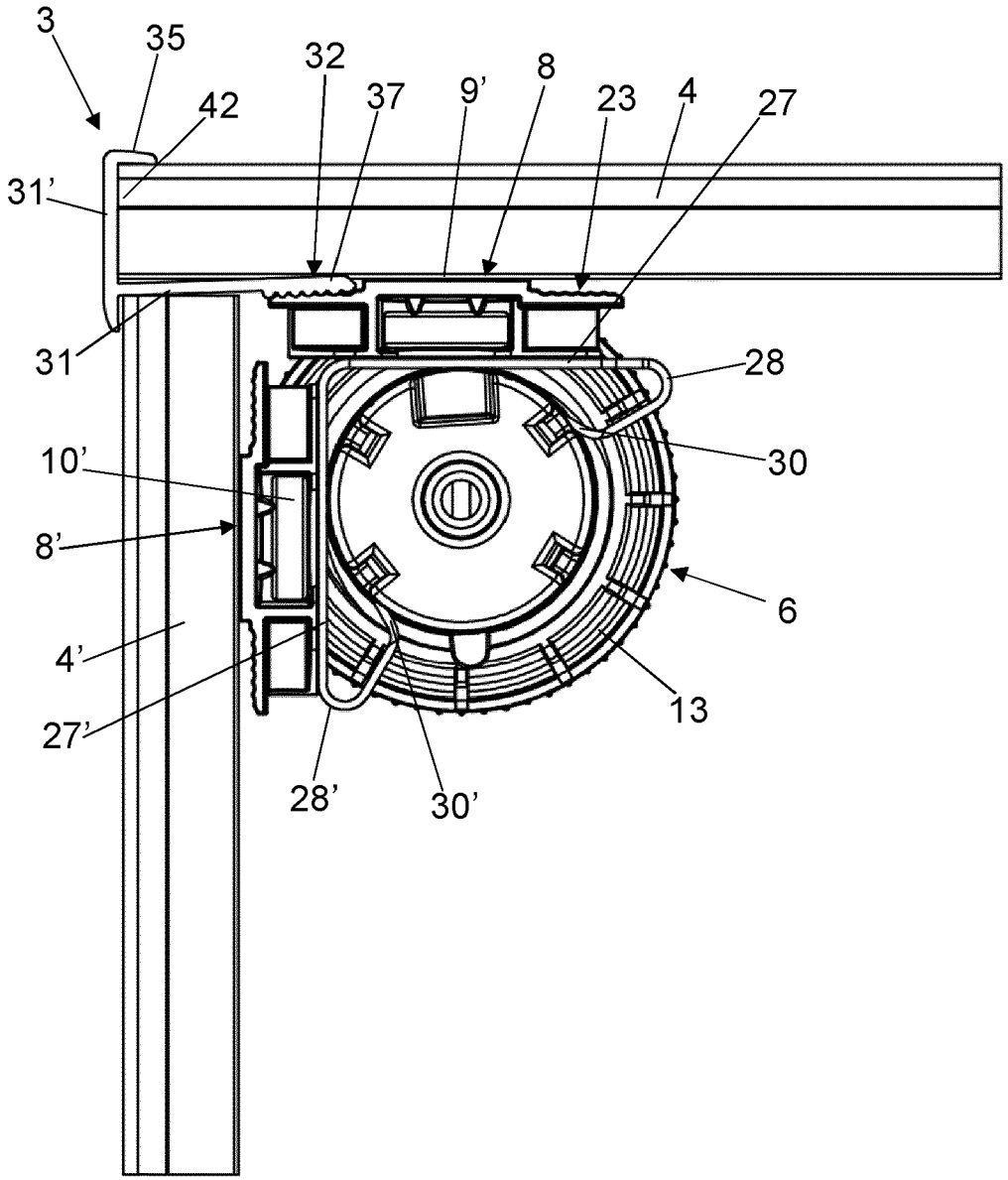


FIG. 3

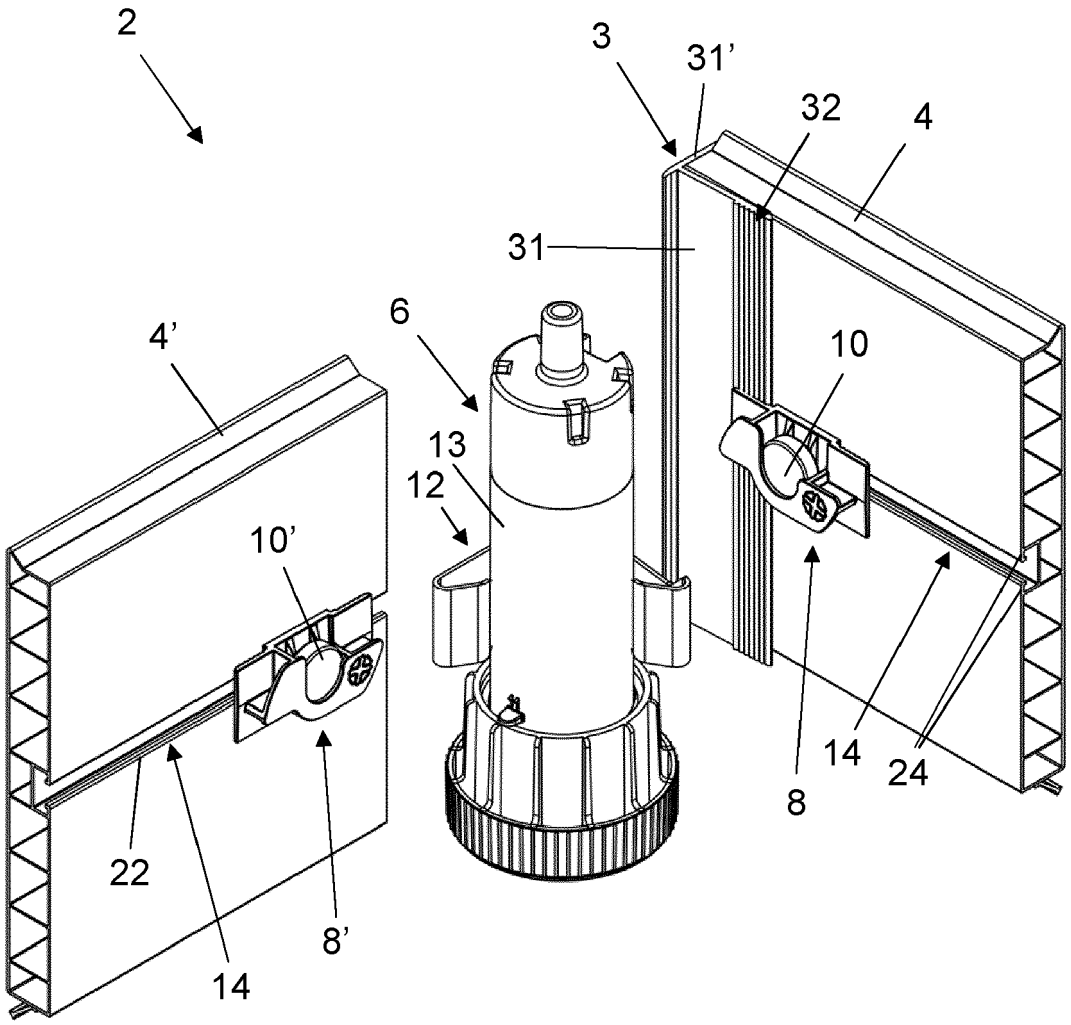


FIG. 4

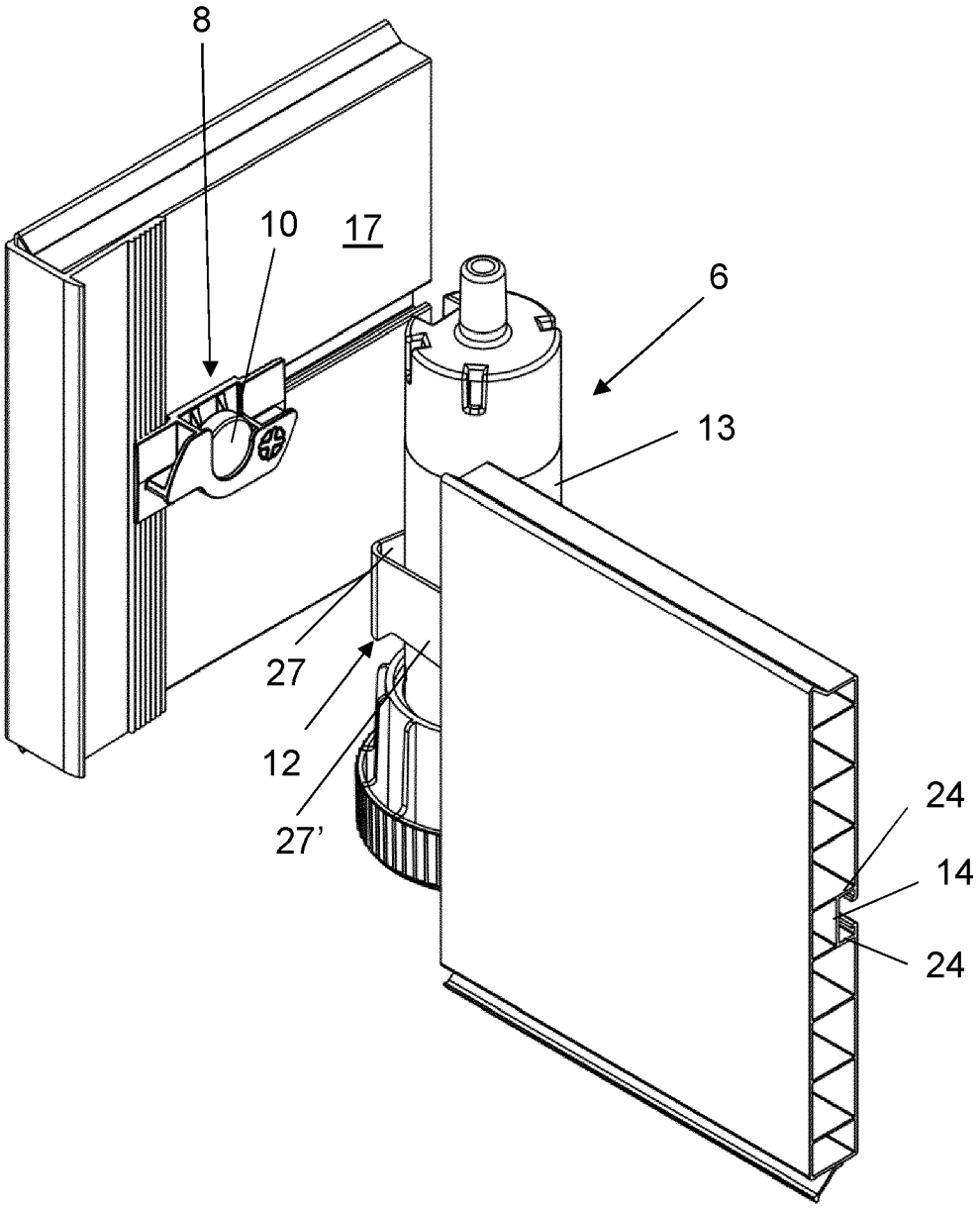
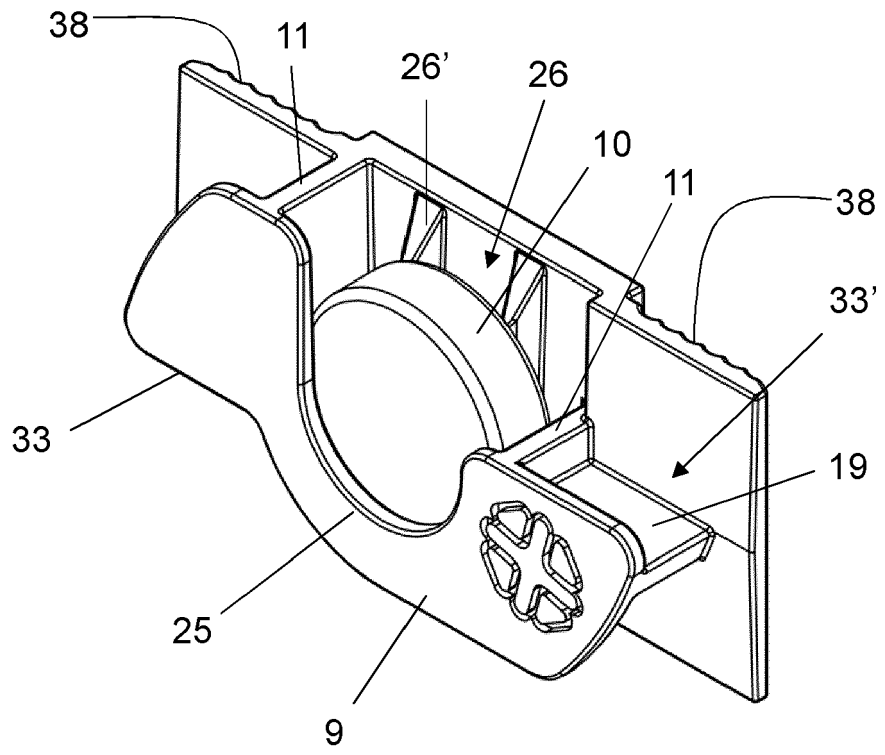


FIG. 5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26'
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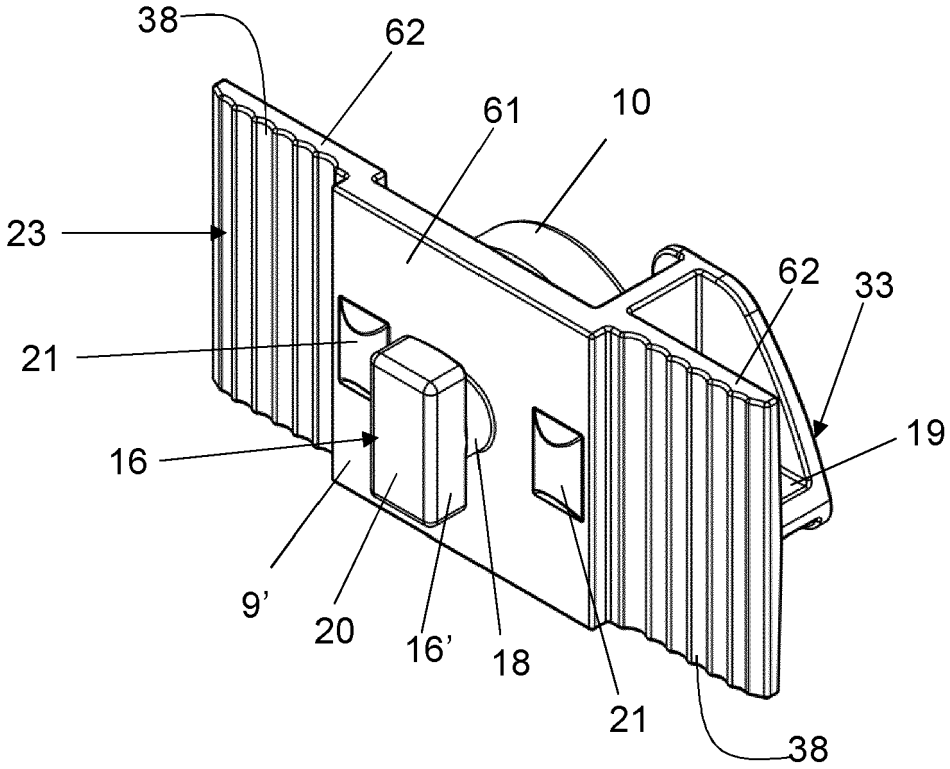
10
11
38
33'
33
19
25
9

FIG. 6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9'
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16'
18
21
38

FIG. 7

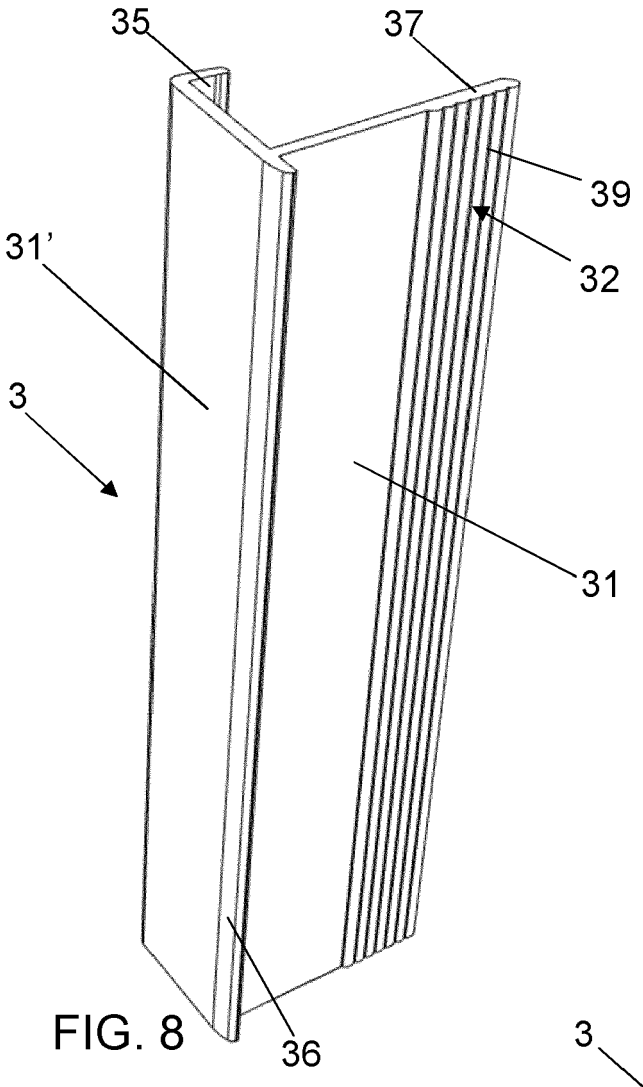


FIG. 8

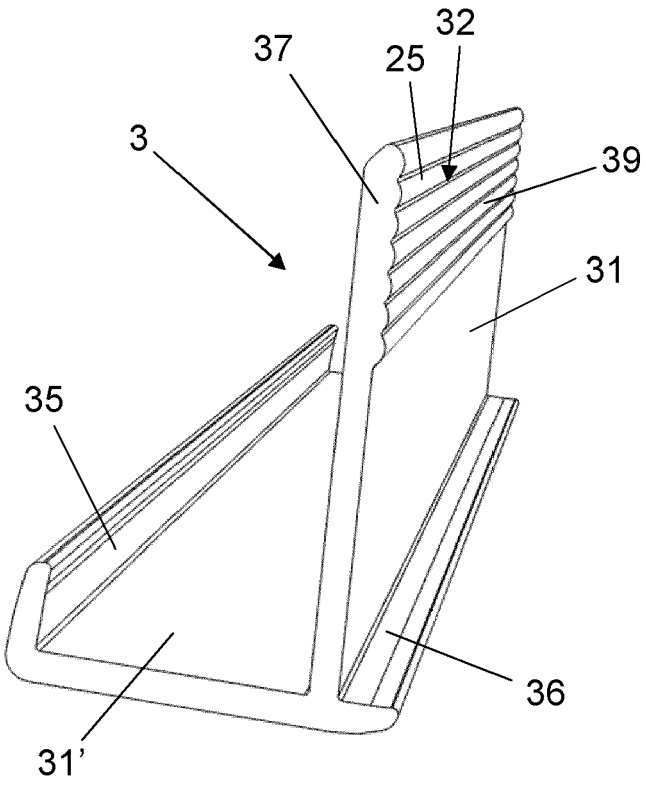


FIG. 9

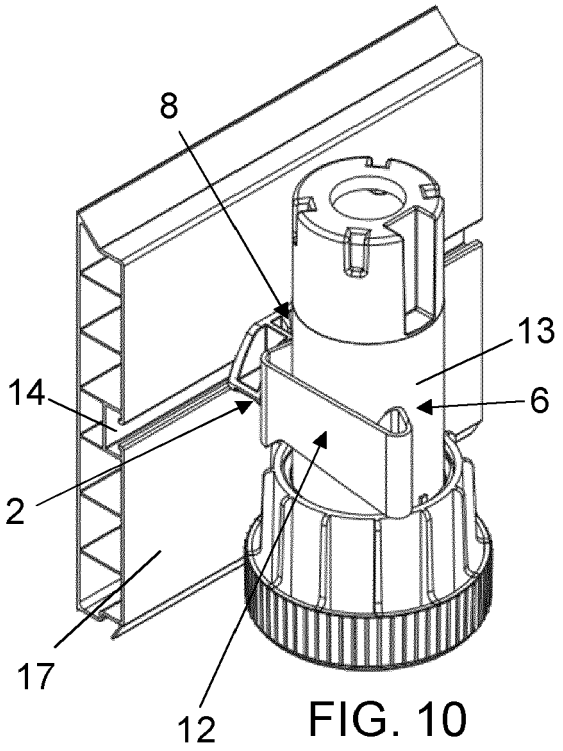


FIG. 10

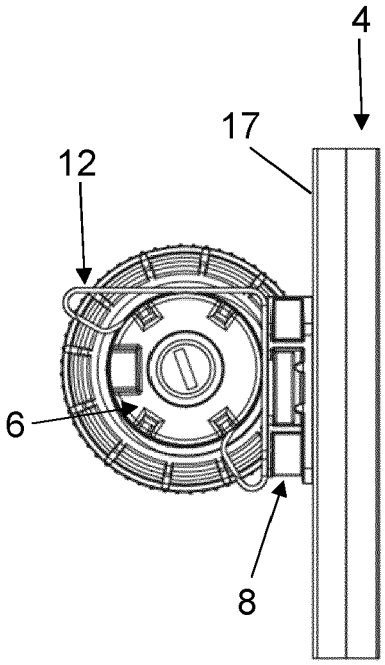


FIG. 11

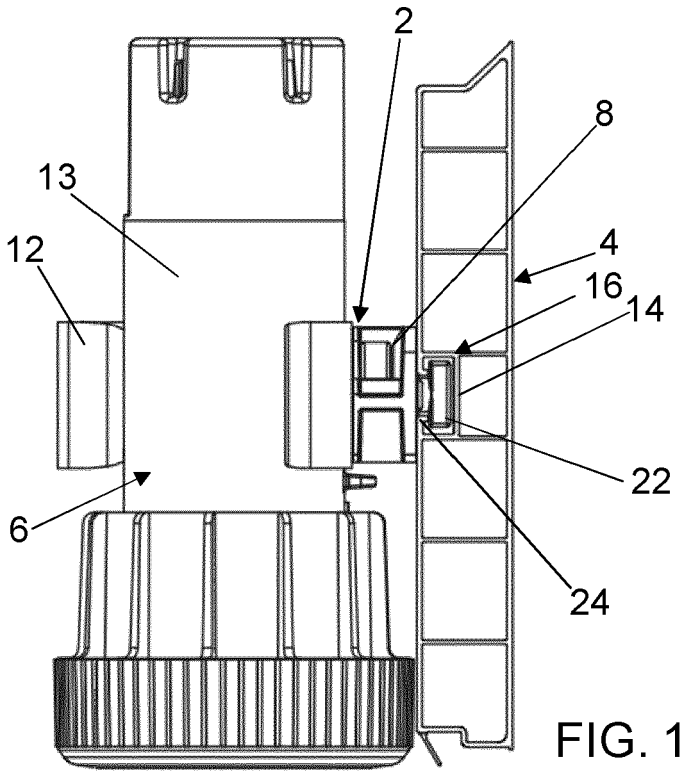
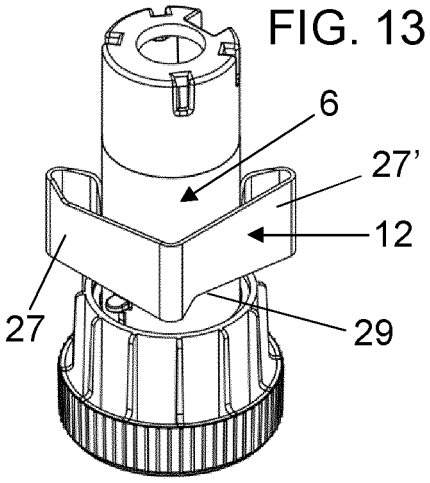


FIG. 12

FIG. 13



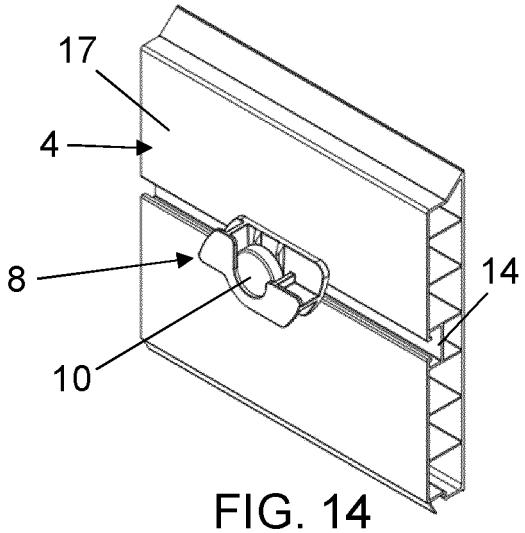


FIG. 14

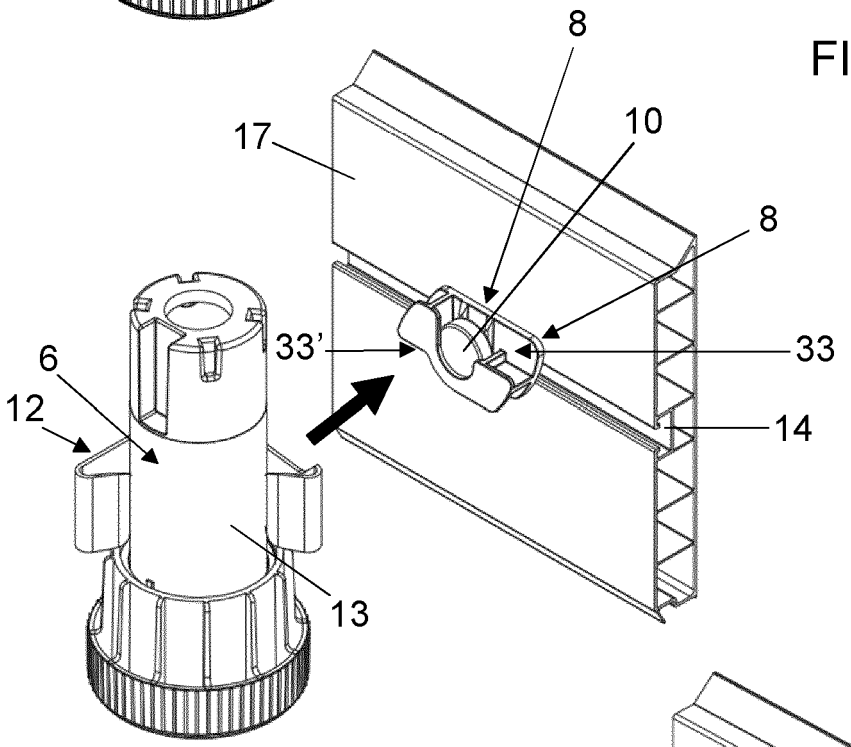


FIG. 15a

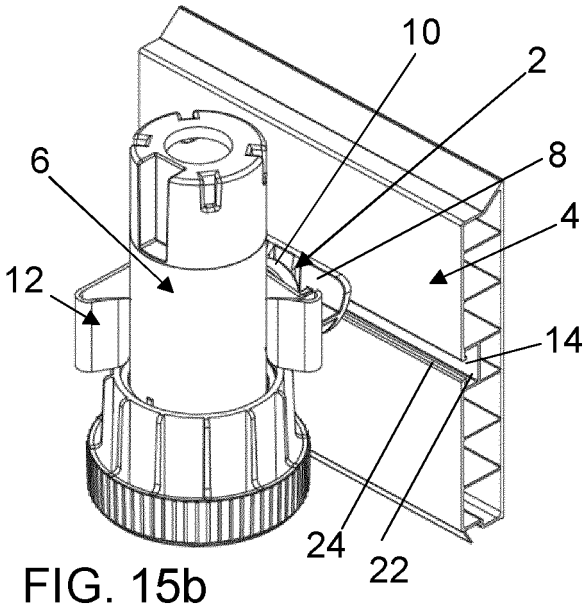


FIG. 15b

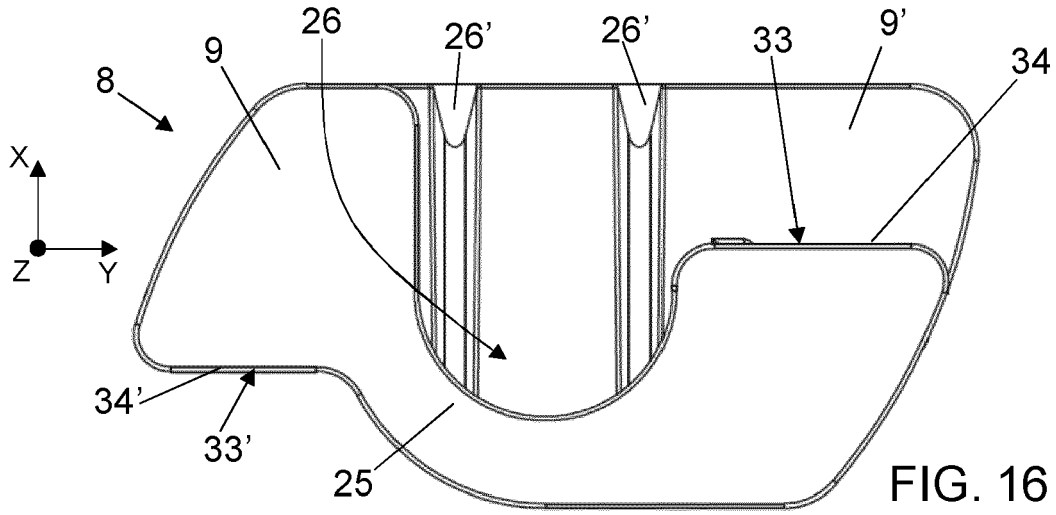


FIG. 16

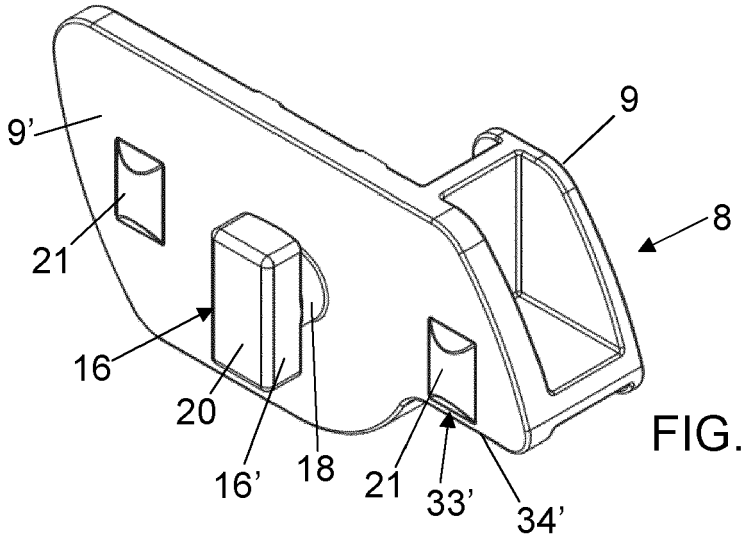


FIG. 17

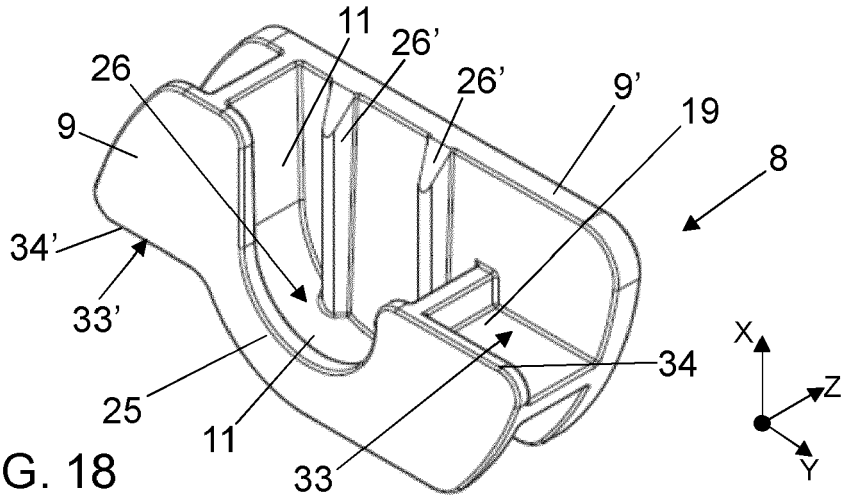


FIG. 18

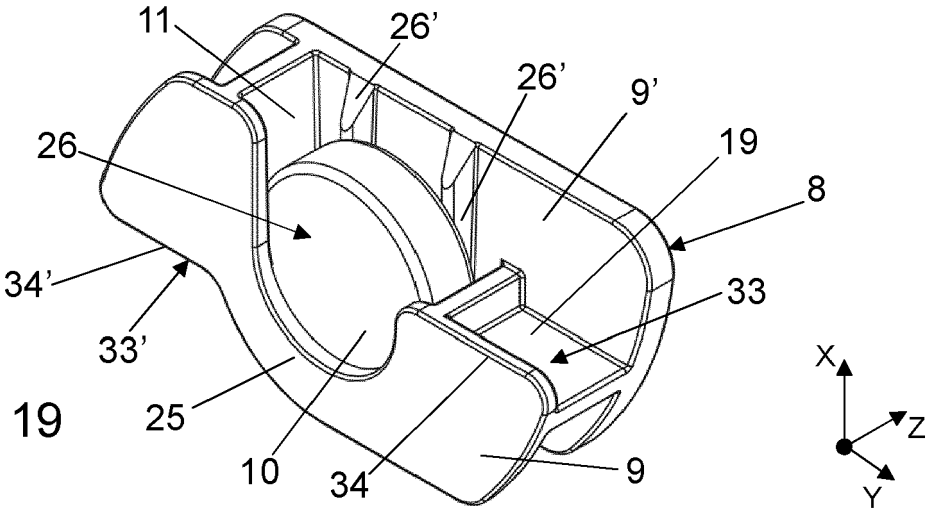


FIG. 19

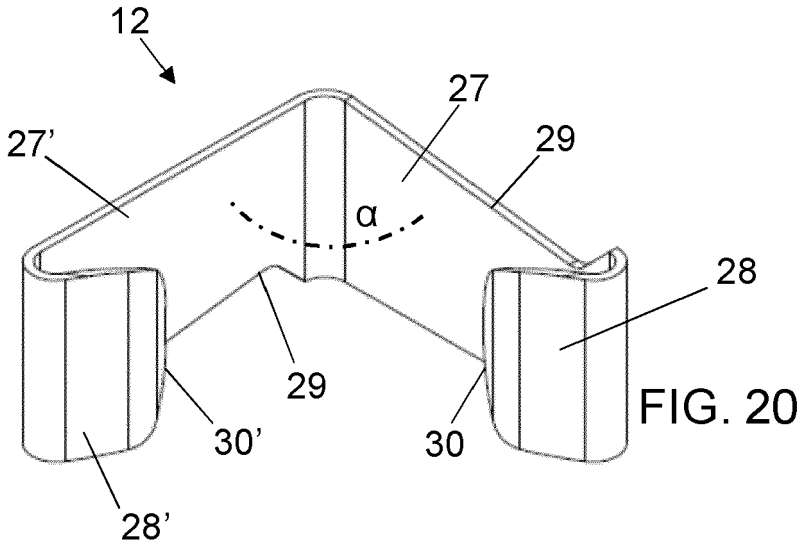


FIG. 20

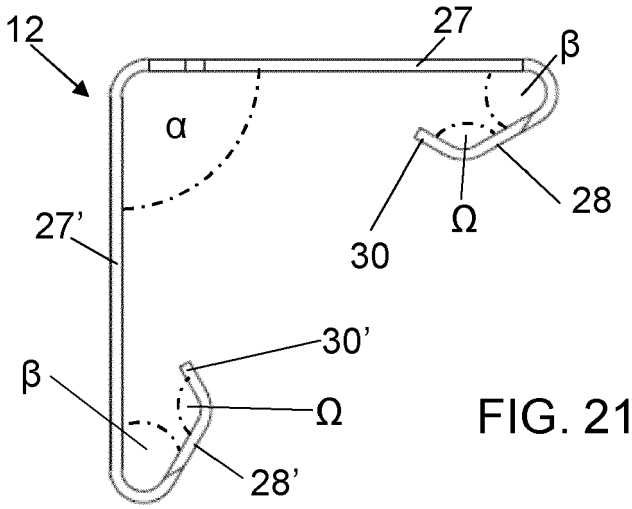


FIG. 21

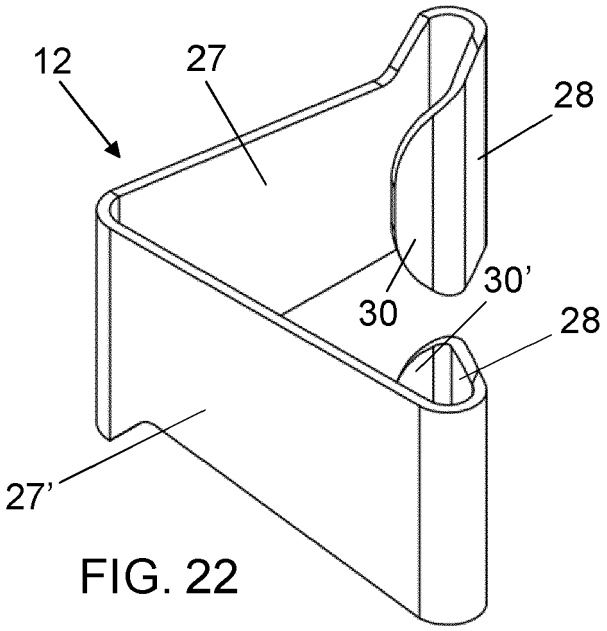


FIG. 22

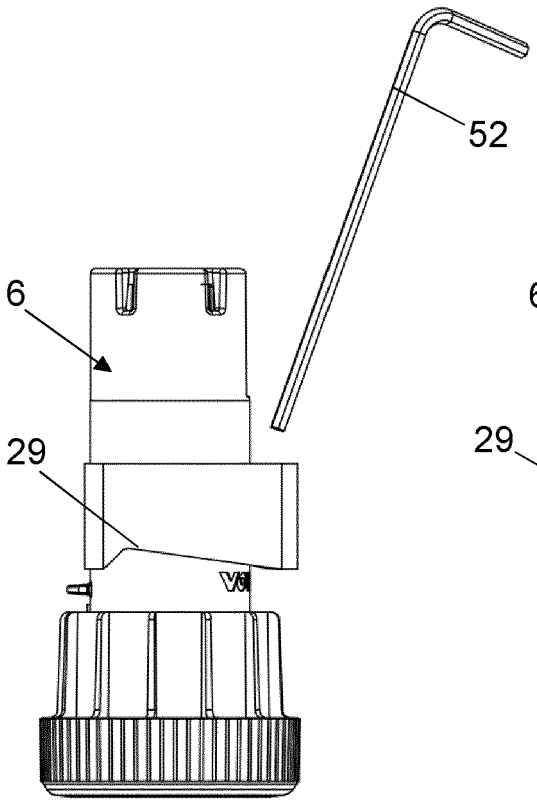


FIG. 23a

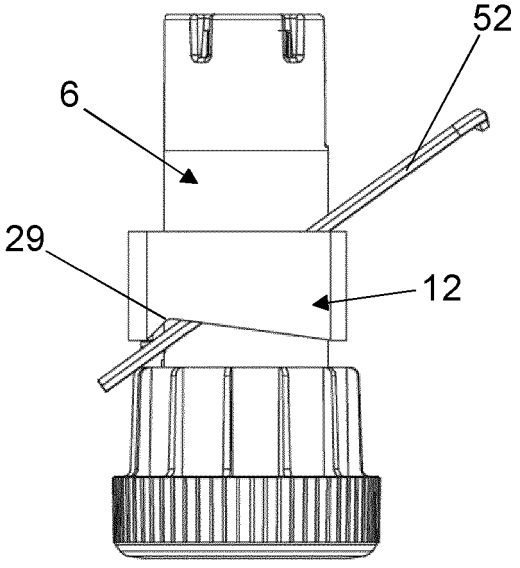


FIG. 23b

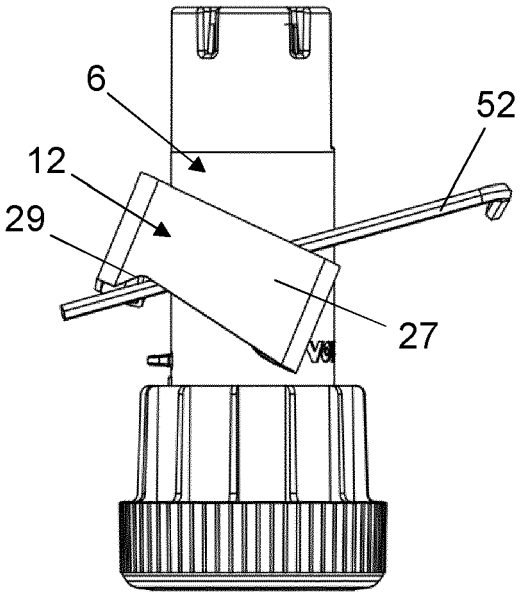


FIG. 23c

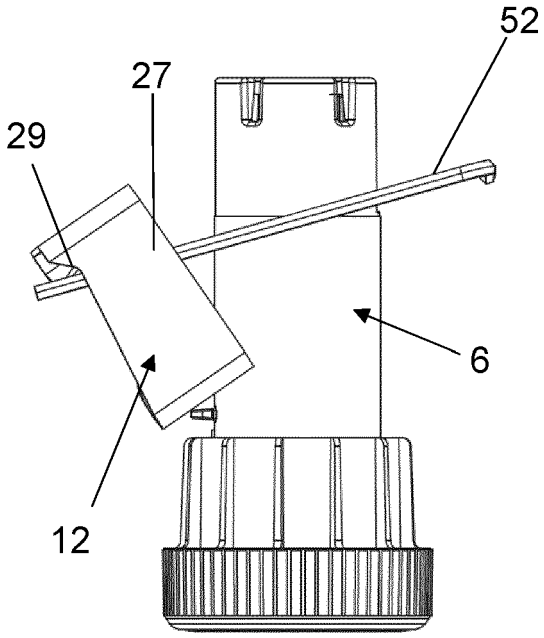


FIG. 23d

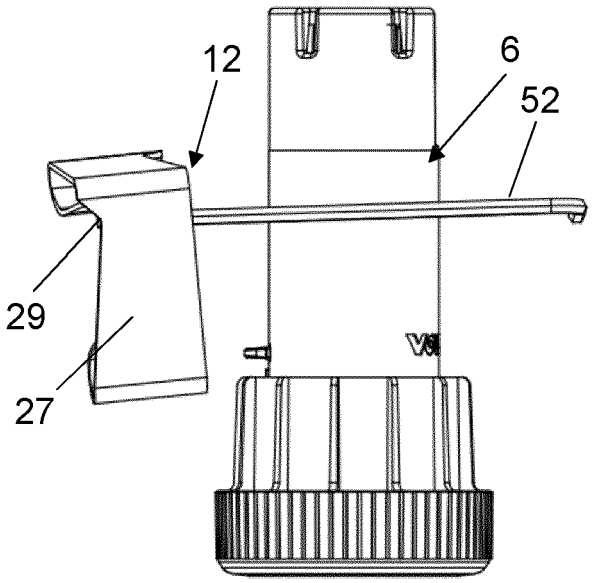


FIG. 23e

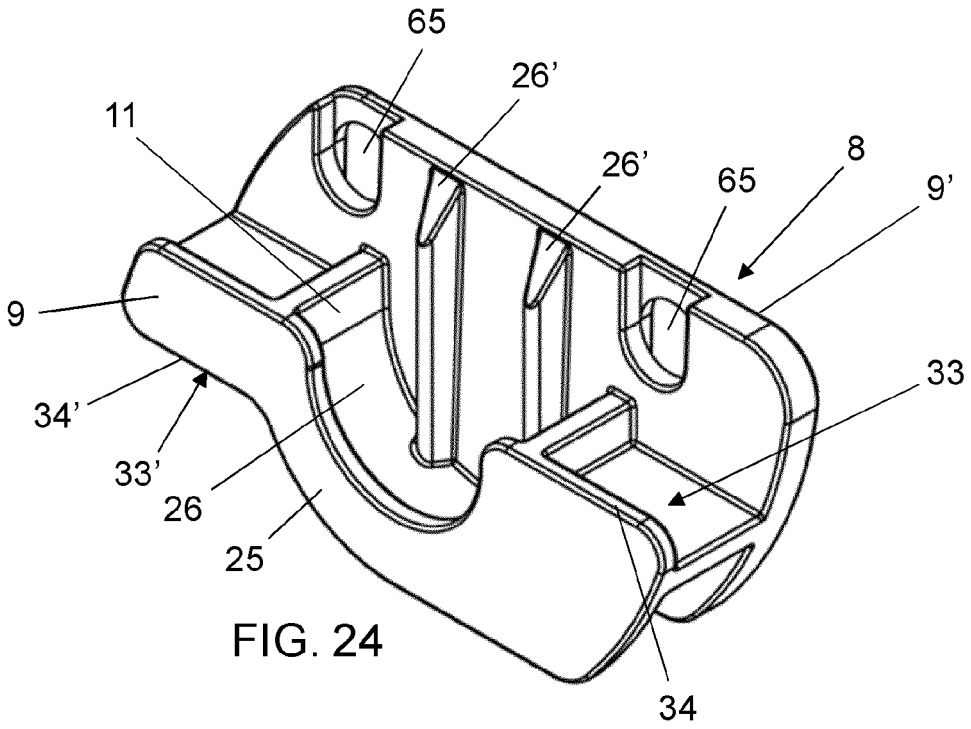


FIG. 24

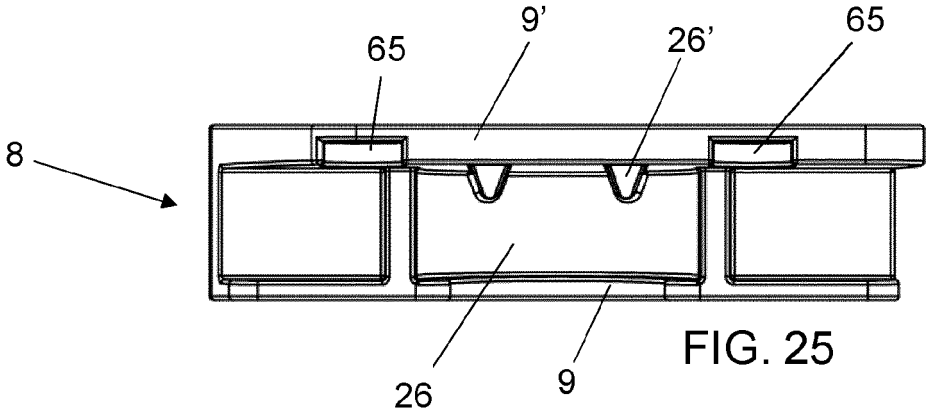


FIG. 25

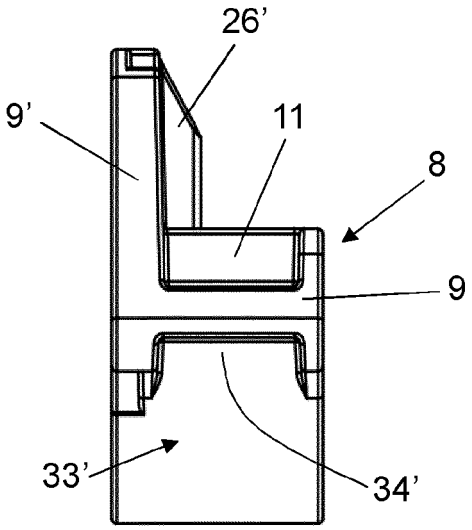
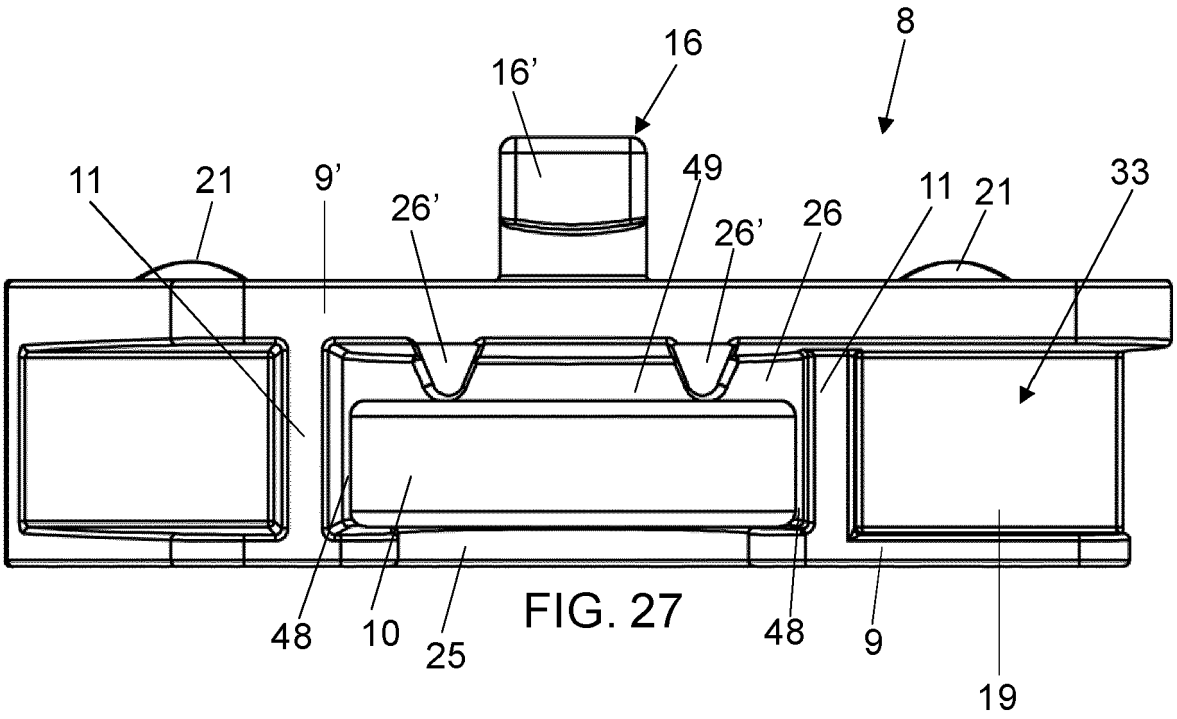


FIG. 26


8
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16'
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FIG. 27

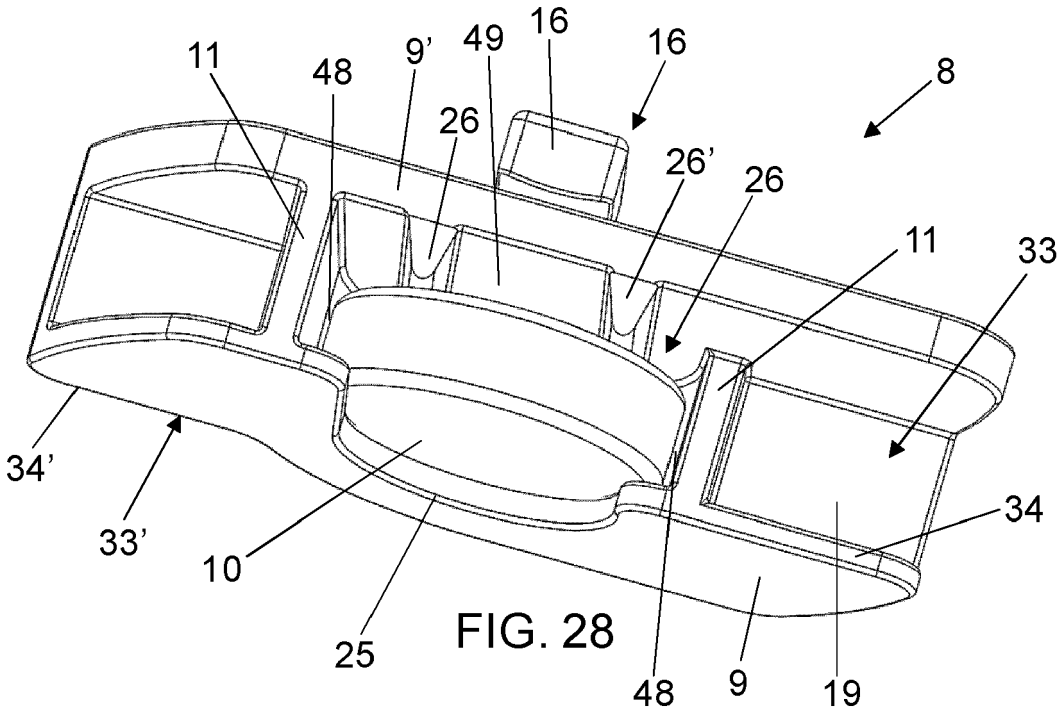
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FIG. 28

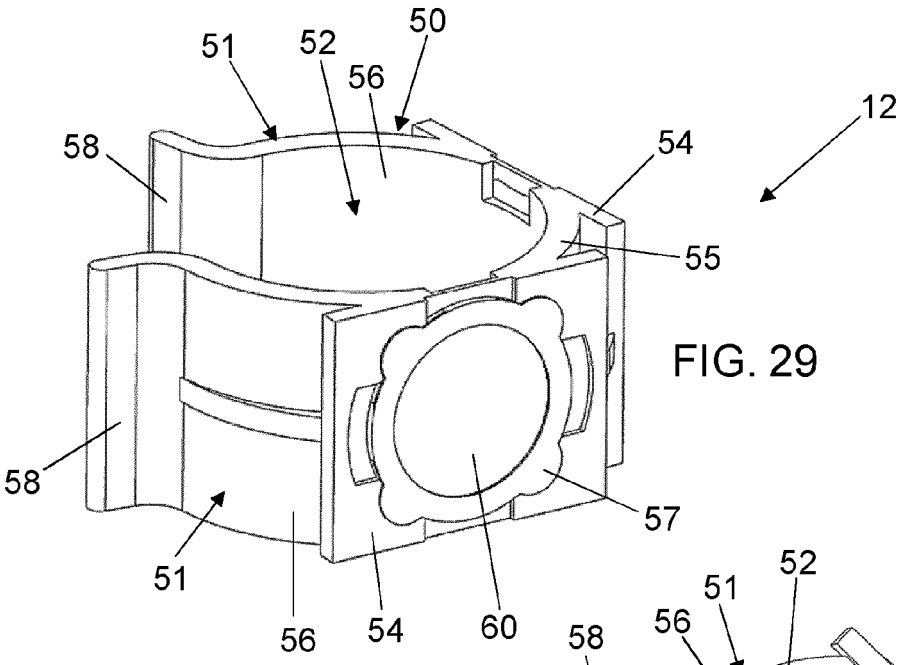

FIG. 29

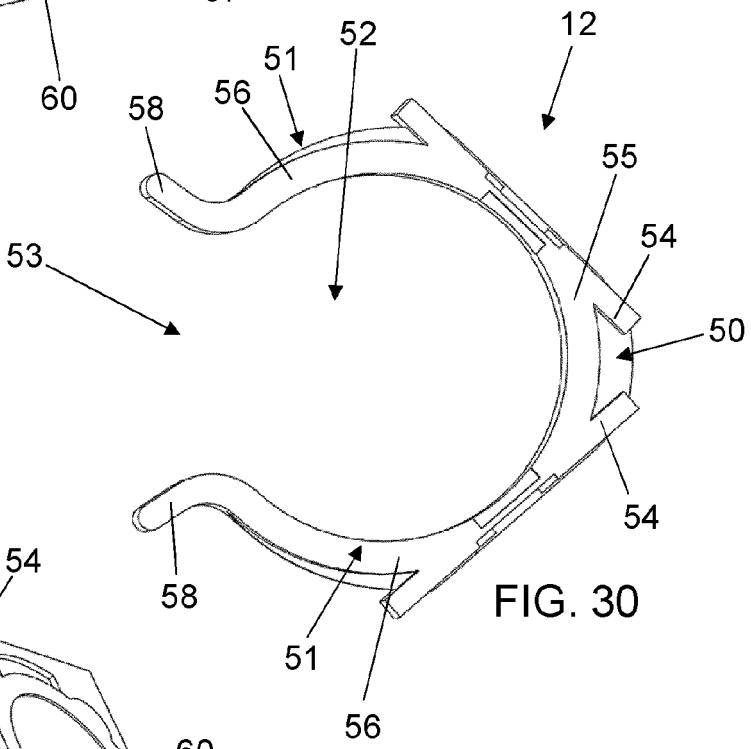

FIG. 30

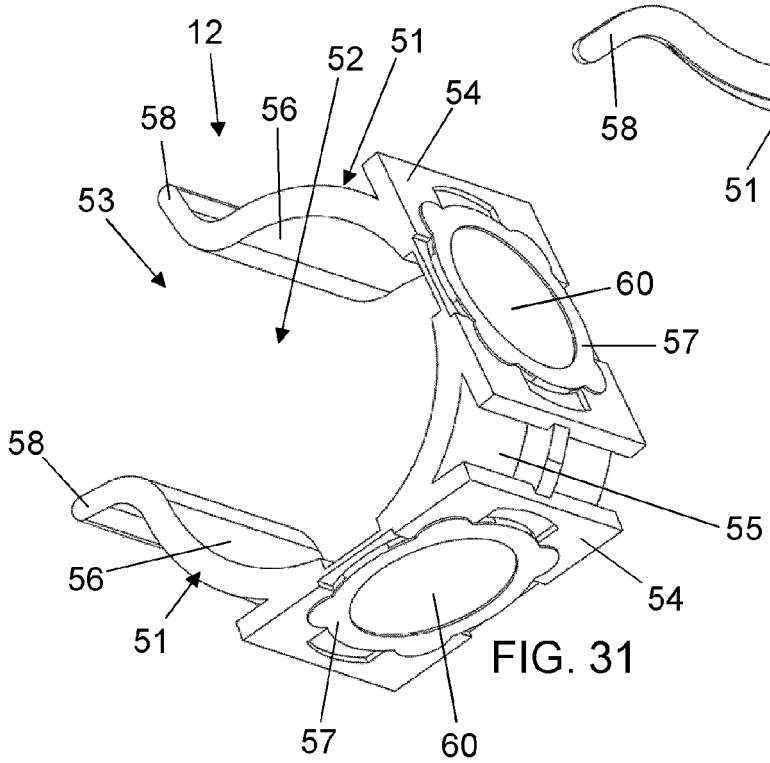

FIG. 31

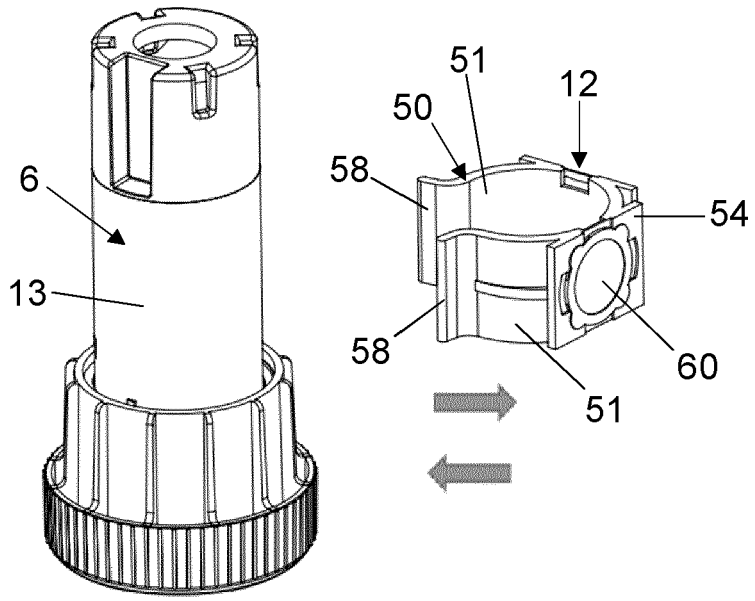

FIG. 32a

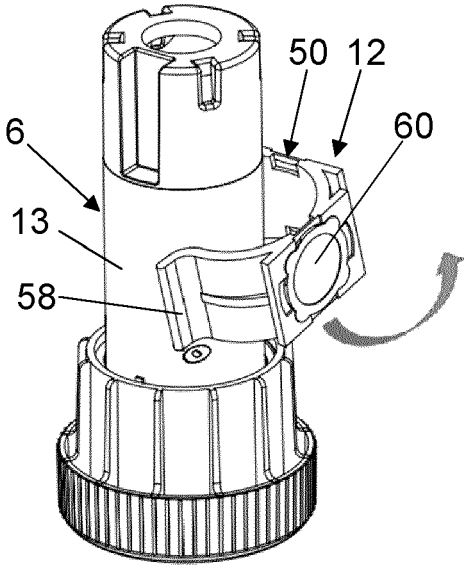

FIG. 32b

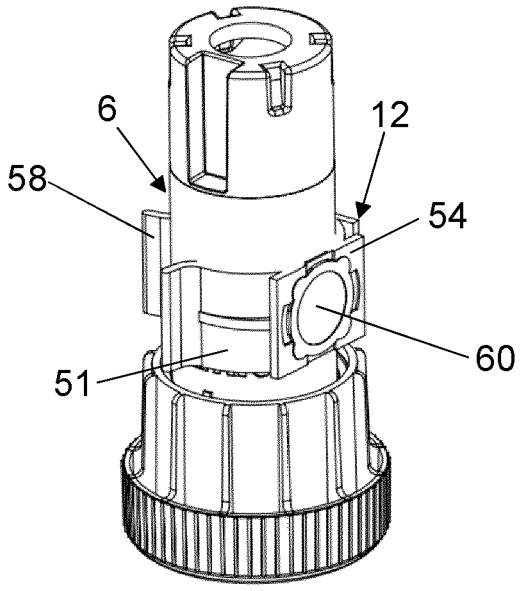

FIG. 32c

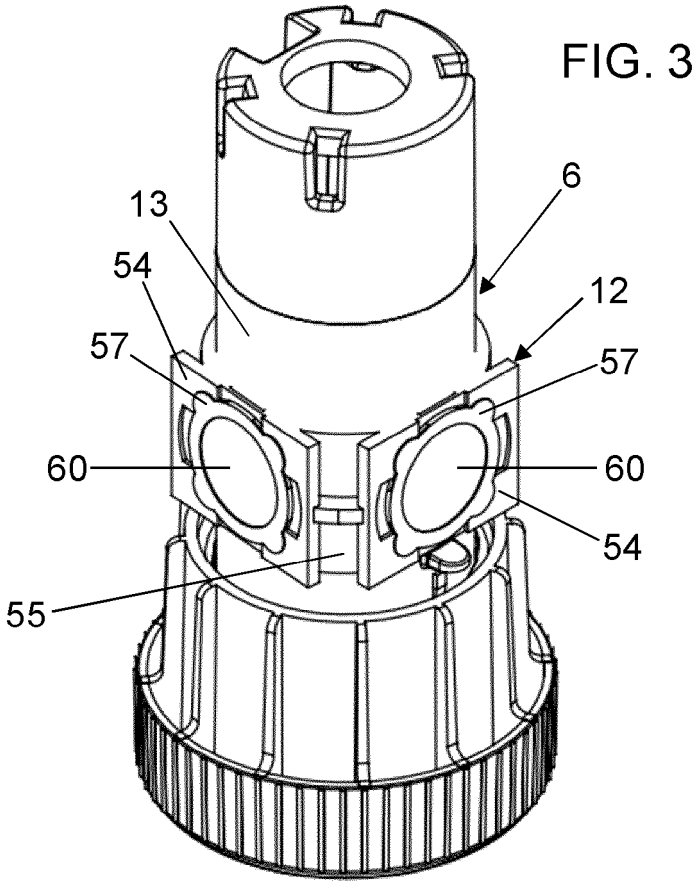

FIG. 33

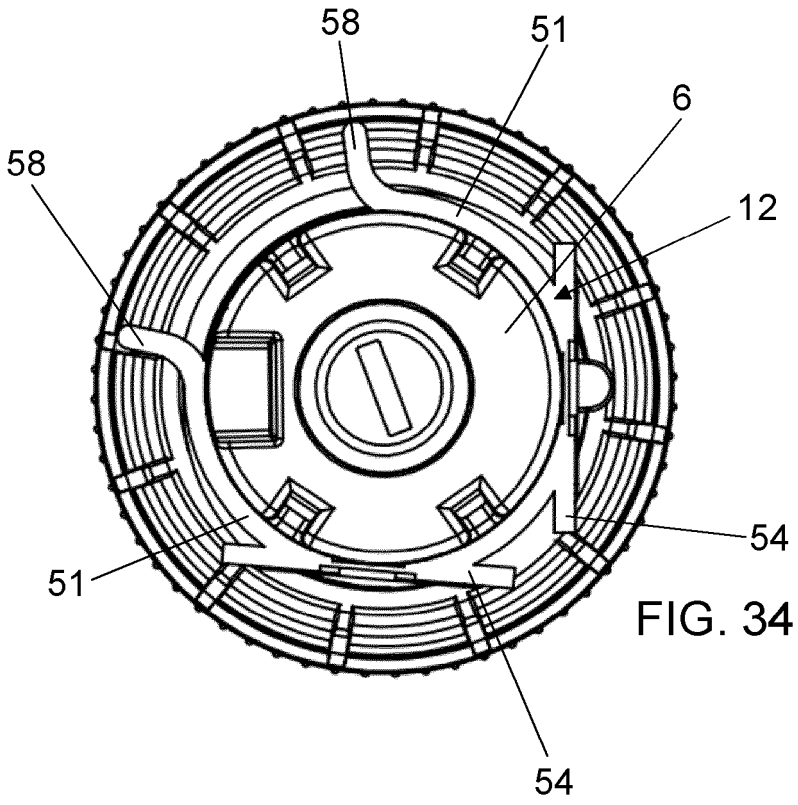

FIG. 34

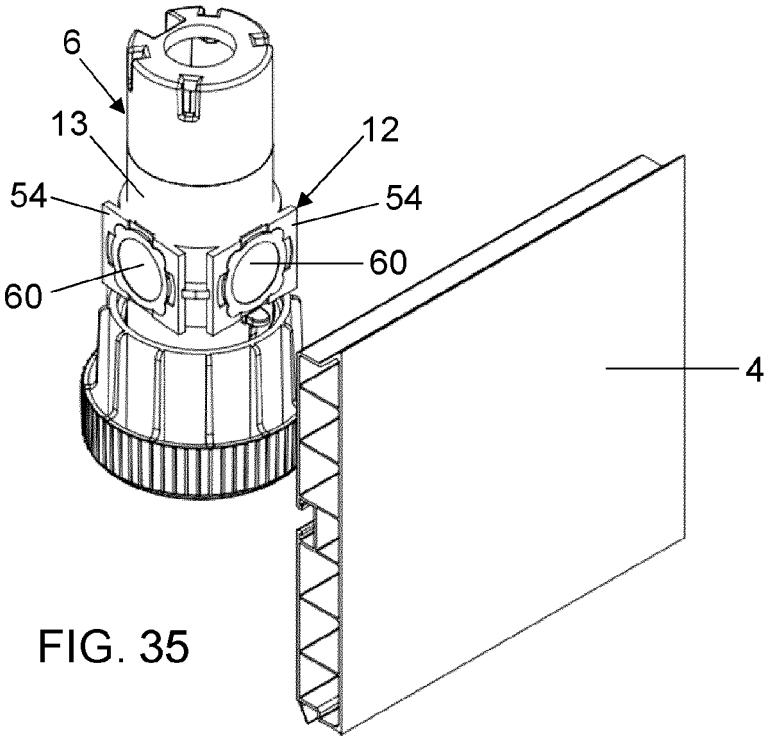

FIG. 35

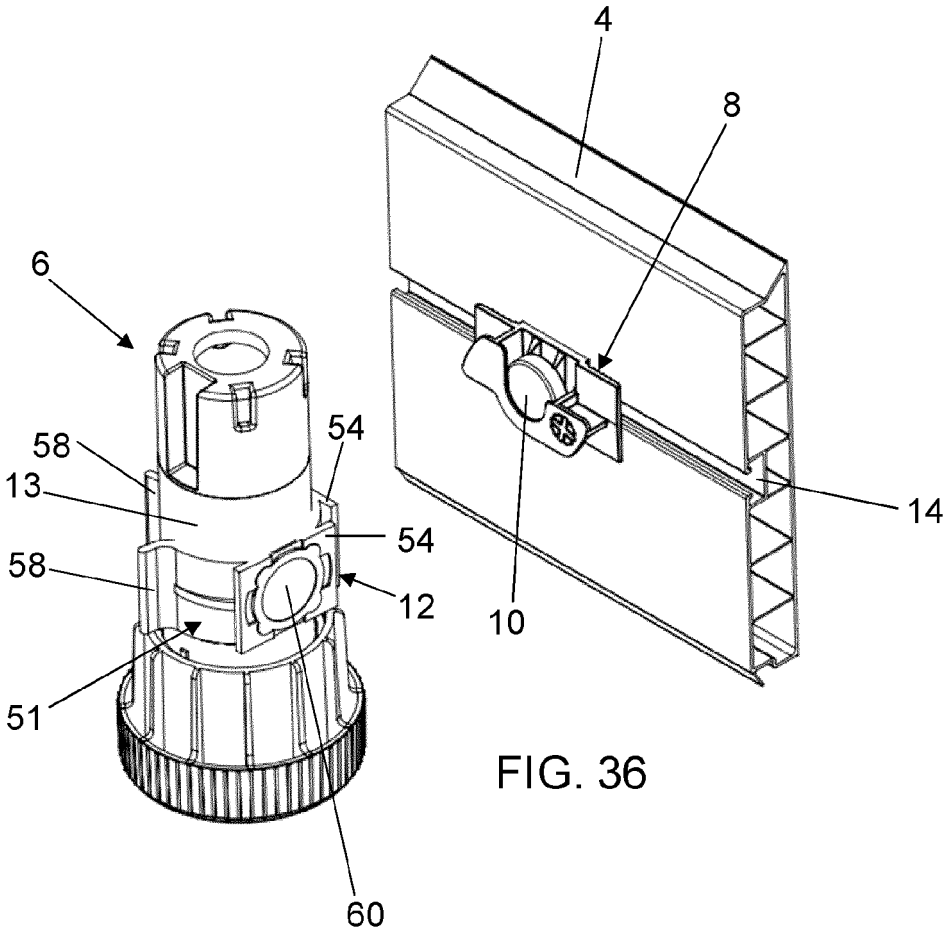

FIG. 36

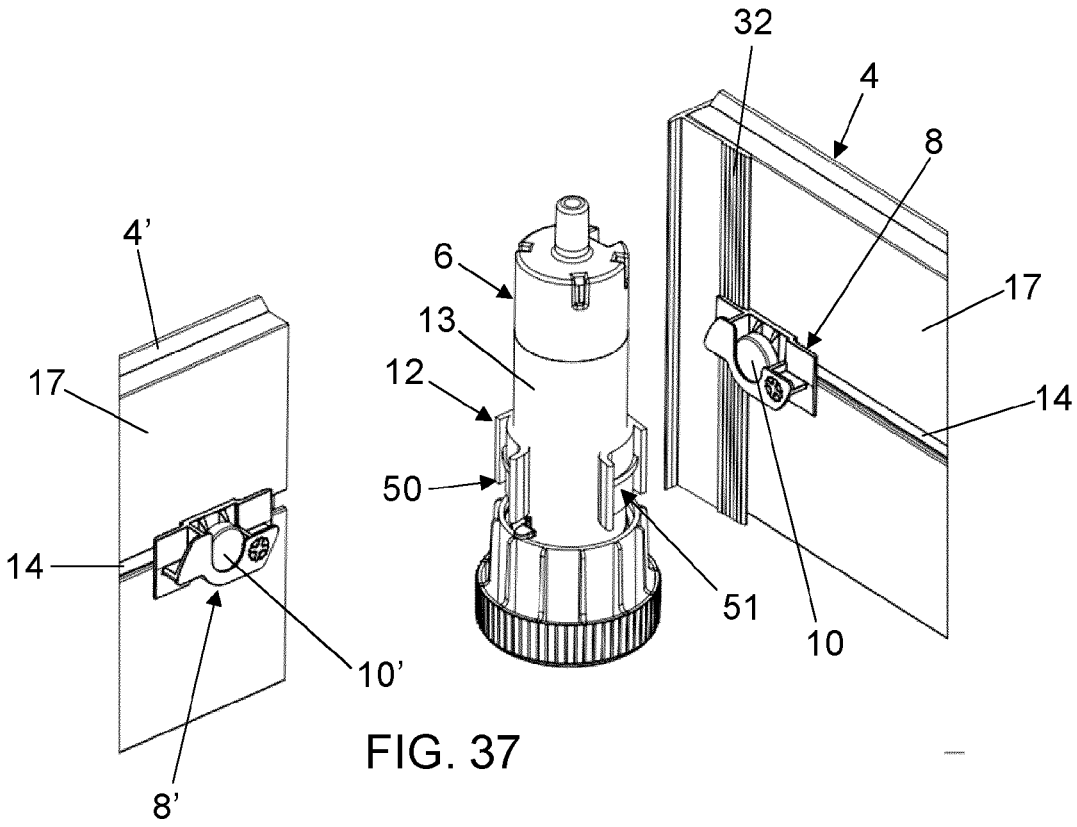

FIG. 37

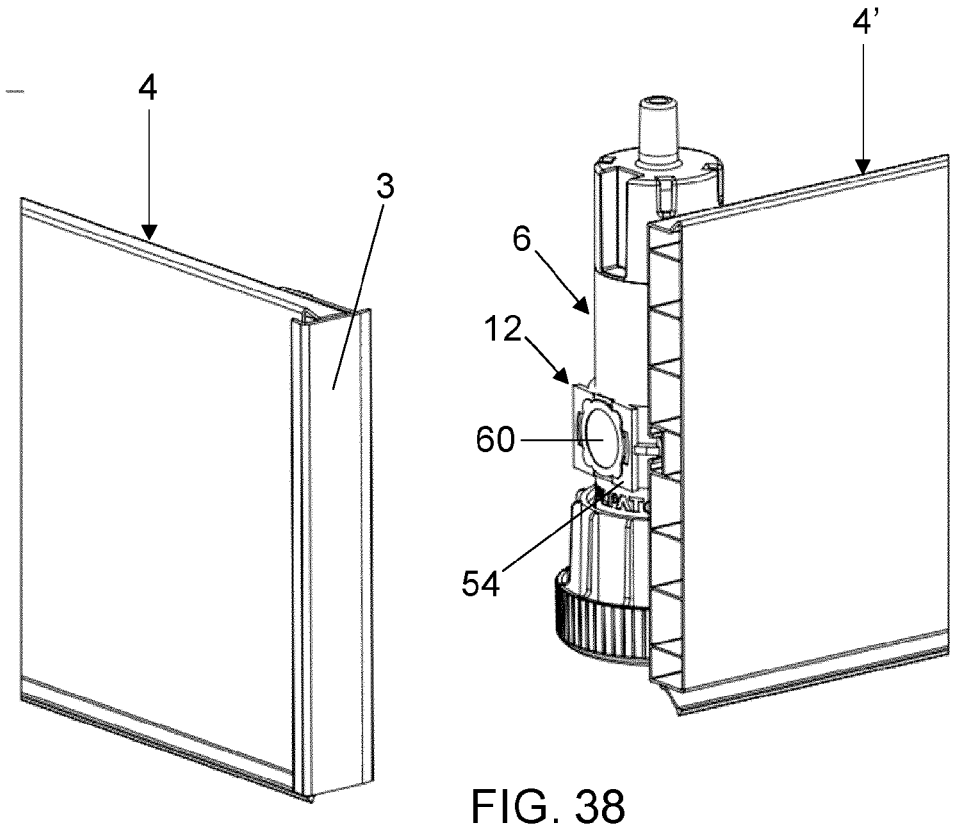

FIG. 38

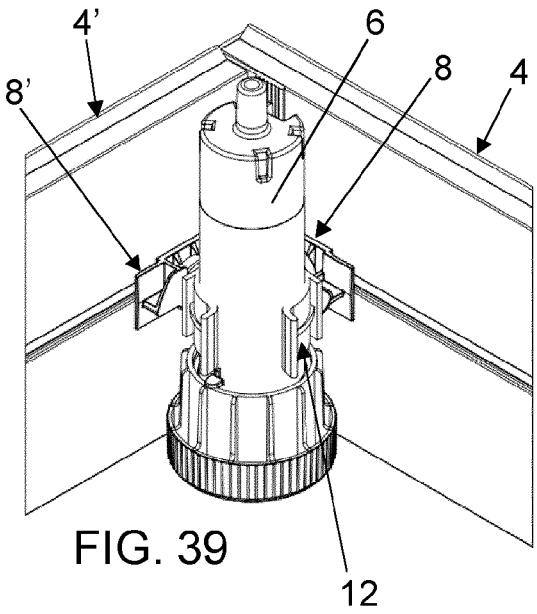

FIG. 39

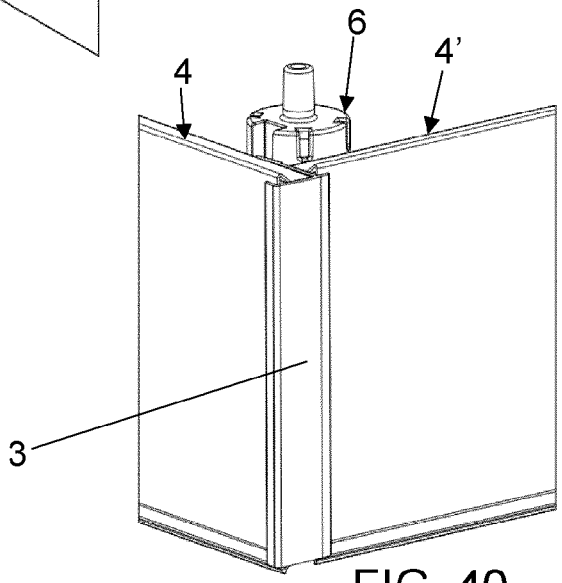

FIG. 40

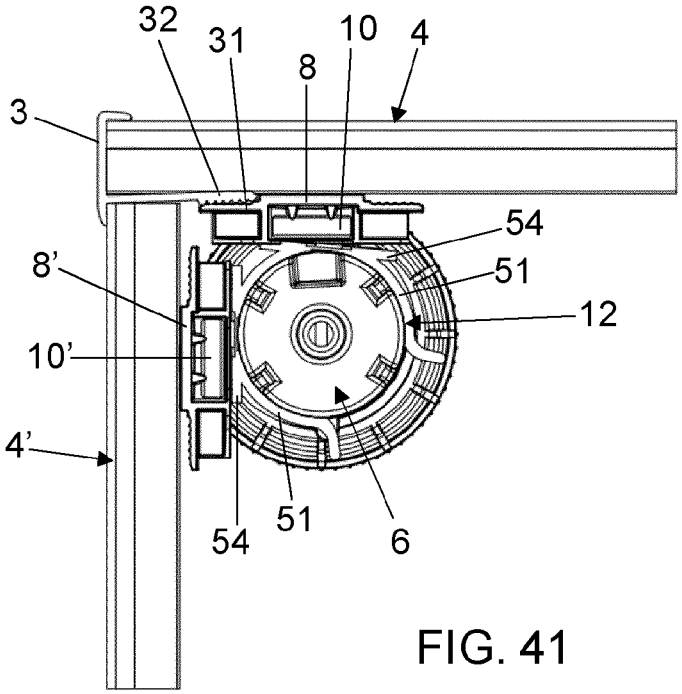

FIG. 41

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EUROPEAN SEARCH REPORT

Application Number
EP 21 17 1143

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y A	EP 3 616 565 A1 (SCILM SPA [IT]) 4 March 2020 (2020-03-04) * paragraph [0006] - paragraph [0078]; figures 1-5 * -----	1,9, 11-15 2-8 10	INV. A47B95/00
Y	EP 3 335 595 A1 (VOLPATO IND S P A [IT]) 20 June 2018 (2018-06-20) * paragraph [0011] - paragraph [0043]; figures 1-10 * -----	2-8	
			TECHNICAL FIELDS SEARCHED (IPC) A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 September 2021	Kohler, Pierre

CATEGORY OF CITED DOCUMENTS

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15-09-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 3616565 A1	04-03-2020	NONE	
EP 3335595 A1	20-06-2018	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82