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(54) **SLIDING PATIO DOORS**

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Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to sliding patio doors.

[0002] Sliding patio doors comprise a bottom sill with rails over which several sliding doors are able to travel alongside each other. The first sliding door takes along the next sliding door in order to close the sliding patio doors in series. The sliding doors have been manufactured in a factory and therefore are accurately rectangular. In the project the height of the sliding doors can be adjusted afterwards at the wheels in order to have the sliding patio doors positioned straight aligned to a vertical frame post that is slightly askew. As a result, the flights with which the sliding doors take each other along, may impact each other obliquely, causing malfunctioning or damage. In case of hard impacts, one of the sliding doors may even be launched off of its rail.

[0003] EP-A-2476 840 discloses sliding patio doors of abovementioned type and in accordance with the preamble of claim 1.

[0004] It is an object of the invention to provide sliding patio doors of which the flights of the sliding doors contact each other reliably.

[0005] It is an object of the invention to provide sliding patio doors that are suitable for relatively tall elongated sliding doors.

SUMMARY OF THE INVENTION

[0006] The invention provides sliding patio doors comprising a bottom sill having parallel rails and a first sliding door and a second sliding door that can be moved over the rails in order to open and close the sliding patio doors, wherein the first sliding door has been provided with a first base profile at the bottom side, to which base profile a first running carriage has been attached and the second sliding door has been provided with a second base profile at the bottom side, to which base profile a second running carriage has been attached with which the sliding doors travel alongside each other over their individual rail, wherein the first running carriage has been provided with a first running wheel and a first flight and the second running carriage has been provided with a second running wheel and a second flight, wherein the first flight and the second flight have been positioned for in travel direction contacting each other as a result of which the one sliding door takes along the other sliding door, wherein the first running carriage has been provided with a first adjusting foot to which the first running wheel has been bearing mounted, wherein the first adjusting foot is adjustable transverse to the travel direction and relative to the first base profile in order to adjust the height of the first sliding door relative to its rail at the location of the first running carriage, wherein the first flight has been attached to the first adjusting foot.

[0007] The sliding patio doors according to the invention comprise sliding doors including flights so that they are able to take each other along when closing the sliding patio doors. The first flight forms a part of the first adjusting foot to which also the first running wheel has directly been bearing mounted. The first flight thus always remains at the same height relative to the rails. It does not depend on the height-settings of the first sliding door relative to the rails. The first flight and the second flight are then able to contact each other properly.

[0008] In one embodiment the first adjusting foot has been provided with a first swivelling arm which, with a first hinge, has been coupled to the first base profile so as to swing, wherein in the travel direction the first running wheel and the first flight are situated spaced apart from the first hinge. The height can then be adjusted by adjusting the angle of the first swivelling arm relative to the first base profile. The parts of the first running carriage can then remain connected with each other during adjustment in order to be able to make accurate adjustments afterwards. There is no need to disassemble anything.

[0009] In one embodiment the first running carriage has been provided with a first attachment cassette to which the first adjusting foot has been coupled, wherein the first running carriage has been attached to the first base profile by the first attachment cassette. The first running carriage thus forms one assembled unity that can be attached to the first base profile as a unit. As a result, the base profile can be a relatively simple extrusion profile.

[0010] In a combined embodiment the first attachment cassette has been provided with a first upper wall and two parallel first side walls in between which the first swivelling arm has been accommodated so as to hinge, wherein the first upper wall has been provided with a first internally threaded channel and an adjusting screw, wherein the first channel debouches in the direction of the first adjusting foot and the first adjusting foot has been provided with a first adjusting edge protruding from the first swivelling arm, which adjusting edge at least partially extends in the mouth of the first channel and is in spot contact with the adjusting screw at a distance from the hinge. From the first channel the adjusting screw is in spot contact with the first swivelling arm in order to accurately adjust the angle from there. The adjustment can take place while the first sliding door has been placed on its rail.

[0011] In one embodiment thereof, the first adjusting edge has a first portion extending parallel to the first swivelling arm and merging into a second portion that is oblique thereto. The obliqueness of the oblique part defines the degree to which the height responds to a rotation of the adjusting screw. In that way the accuracy of the height-settings can be defined.

[0012] In one embodiment the first base profile has been provided with an attachment chamber in which the first attachment cassette has been accommodated, wherein the first base profile and the attachment chamber

have been provided with attachment edges cooperating with each other and allowing translation of the first base profile relative to the first attachment cassette in the travel direction, wherein said translation has been fixated with an elastic coupling between the first base profile and the first attachment cassette. By means of the attachment cassette, the first running carriage forms one assembly, the elastic coupling of which, within its elastic range, permitting a small translation relative to the base profile in travel direction. The elastic coupling thus damps a part of the pulse passing to the sliding doors due to the flights contacting each other. In that way damage to the flights, such as breaking off or bending, can be counteracted. The elastic coupling can be used separately from adjusting the height.

[0013] In one embodiment the elastic coupling comprises an attachment bush made of an elastic or rubbery material which has been secured to the first base profile by means of an attachment screw, wherein the attachment bush has been accommodated or expanded in an opening in the first running carriage. Such an attachment bush is also called a 'well-nut'.

[0014] In one embodiment the first flight and the second flight comprise engagement members that contact each other, and that in the travel direction are situated within the diameter of the first running wheel and second running wheel, respectively.

[0015] In one embodiment the first flight and the second flight comprise engagement members that contact each other, wherein the engagement members comprise a tenon member and a mortise member that engage into each other in a form-closed manner. Upon impact, the form-closed engagement ensures a secure connection between the first running carriage and the second carriage. When the first running carriage is situated at the rear of the first base profile and the second running carriage is situated at the front of the second base profile, the weight and mass inertia of the as yet stationary second sliding door keeps the first running carriage on its rail. This renders the sliding patio doors suitable for containing tall elongated sliding doors, the centre of gravity of which being situated relatively high above the base profile. The form-closed engagement can be used separately from adjusting the height.

[0016] In one embodiment the tenon member is conical, preferably straight conical, so that it auto-pilots into the mortise member.

[0017] In one embodiment the mortise member comprises a body having a bore hole, preferably a straight conical bore hole.

[0018] In one embodiment the first running carriage has been provided with a first outrigger and the second running carriage has been provided with a second outrigger to which the engagement members have been attached, wherein the first outrigger and the second outrigger keep the engagement members below the upper running surface of the rails. The first outrigger and second outrigger extend to below the upper running surface of the rails over which the running carriages travel and are situated in between them. In that way they form an orienting aid bringing the running wheels on top of their rail after a launch.

[0019] In one embodiment the second running carriage has been provided with a second adjusting foot to which the second running wheel has been bearing mounted, wherein the second adjusting foot is adjustable relative to the second base profile in order to adjust the height of the second sliding door relative to its rail at the location of the second running carriage, wherein the second flight has been attached to the second adjusting foot. In that way the second running carriage acquires the same properties as the first running carriage. This may also apply to the other measures described above for the first running carriage.

[0020] In one embodiment the first sliding door and the second sliding door have both been provided with a first running carriage and a second running carriage travelling over the same rail, wherein the first running carriage and the second running carriage in the travel direction are spaced apart from each other at the front and the rear of the first base profile and the second base profile.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The invention will be elucidated on the basis of a number of exemplary embodiments shown in the attached drawings, in which.

Figure 1 shows an isometric view of sliding patio doors according to an embodiment of the invention;
Figures 2A-2E show an isometric view and a cross-section of the bottom side of the sliding patio doors, and two isometric views of the running carriages at the bottom side of the sliding doors according to figure 1; and
Figures 3A-3C show details of the running carriage according to figure 2.

DETAILED DESCRIPTION OF THE DRAWINGS

[0022] Figure 1 shows sliding patio doors 1 according to an embodiment of the invention. The sliding patio doors 1 comprise an elongated lintel 2 and an elongated bottom sill 10 that are mounted parallel to each other in a frame or groove. In this example, four glass sliding doors have been accommodated between the lintel 2 and bottom sill 10, of which doors, for the sake of clarity of figure 1, only a first sliding door 30 and a second sliding door 31 have been shown. The sliding doors 30, 31 can travel in horizontal direction A in order to open or close the sliding patio doors 1. The sliding doors 30, 31 have both been provided with a rectangular sheet of glass 35 and an elongated base profile 40 bearing the sheet of glass 35. The base profile 40 and bottom sill 10 are shown in detail in figure 2B.

[0023] The bottom sill 10 comprises an aluminium ex-

trusion profile 11 having a straight bottom wall 12 and upright therefrom consecutively an outer wall 13 having a sill nose, three intermediate walls 14-16 and a lower inner wall 17. The outer wall 12 and the intermediate walls 14-16 have the same straight upper edge over which a steel rail 18 has been secured. The four rails 18 are all situated at the same height relative to the bottom wall 12. In between them three elongated chambers 19 have been formed in the bottom sill 10.

[0024] The base profile 40 comprises an aluminium extrusion profile 41 having a front wall 42 and a rear wall 43 connected to each other with a hollow intermediate bridge 44. The base profile 40 thus comprises an upwardly opened insert chamber 45 in which the bottom edge of the sheet of glass 35 has been secured by means of a window rubber 48, and below it a downwardly opened attachment chamber 46 in which at the outer ends a first running carriage 50 and a second running carriage 51 have been secured. For that purpose, the base profile 40 comprises two attachment edges 47, which from the front wall 42 and the rear wall 43, with their free edge extend directly below the intermediate bridge 44 into the attachment chamber 46. The running carriages 50, 51 are situated at the outer ends of each base profile 40 so that the sliding doors 30, 31 can travel stably over one of the rails 18. The base profile 40 has been finished by way of an end cap 95 that has been screwed into the hollow intermediate bridge 44. The first running carriage 50 is shown in detail in figures 3A-3C.

[0025] The first running carriage 50 comprises an attachment cassette 52 in the form of an aluminium extrusion profile 53 having a U-shaped cross-section. The extrusion profile 53 comprises two parallel sidewalls 54 and a thicker upper wall 55 in which two blind slots 56 have been formed in which the attachment edges 47 of the base profile 40 extend. The first running carriage 50 can be slid through the attachment chamber 46 while being suspended. In the upper wall 55 a cylindrical channel 57 is present debouching over less than a quarter of its circumference into the interior chamber 58 defined between the sidewalls 52. The cylindrical channel 57 is internally threaded along a part of its length. An adjusting screw 60 including socket head connection has been accommodated in the cylindrical channel 57. It is also possible to let the adjusting screw 60 tap the internal thread.

[0026] The first running carriage 50 comprises an aluminium adjusting foot 80 accommodated in the attachment cassette 52. The adjustment foot 80 comprises an elongated, rectangular tube 81 having a narrower adjusting edge 85 protruding from the upper wall 84. At one longitudinal side the adjusting foot 80 comprises a flight 87 extending downwards from the angle of the tube 81 and ending with a cylindrical tube 88. The adjusting foot 80 has been positioned such in the attachment cassette 52 that the head surface on the side of the flight 87 more or less coincides with the head surface of the attachment cassette 52. On this side the tube 81 has been provided with a recess at the bottom side, through which recess the upper running surface of the steel running wheel 89 protrudes. The running wheel 89 has been bearing mounted in openings 83 in the sidewalls 82. From said side the adjusting screw 60 has also been placed in the cylindrical channel 57.

[0027] On the opposite side, the attachment cassette 52 and the adjusting foot 80 have openings 70, 90 in which a steel hinge pin 72 has been bearing mounted. The adjusting foot 80 can thus swing in direction B over a stroke of approximately 20 degrees relative to the attachment cassette 52. In the retracted position, the rectangular tube 81 is exactly accommodated in the attachment cassette 52 and it extends parallel thereto. At the location of the internal adjusting screw 60, the adjustment edge 85 has been provided with a straight bevel 86 with which it contacts the outer end of the adjusting screw 60 as it debouches in the cylindrical channel 57. The position of the outer end of the adjusting screw 60 in direction C relative to the bevel 86, defines the minimum height of the attachment cassette 52 relative to the upper running surface of the running wheel 89. From said minimum height the adjusting foot 80 is able to swing freely in direction B to its ultimate position.

[0028] On the side opposite the running wheel 89, the attachment cassette 52 has been provided with an attachment opening 61 extending through the upper wall 55. An attachment bush 62, made of an elastic or rubbery material, fits in this attachment opening 61. At the upper side the attachment bush 62 merges into a wider flange 63. In the bottom side a metal threaded bush 64 has been accommodated, in which the thread 67 of an attachment screw 66 can be screwed. Such an elastic attachment bush 62 including flange 63 and threaded bush 64 are also called a 'well-nut' and they are used for from one side of an opening, that means blind, making an attachment therein. The attachment screw 66 has been provided with a wider head 68 including socket head connection. Said attachment screw 66 extends through an opening in the hollow intermediate bridge 44 of the base profile 40, wherein the head 68 has been sunk to such a deep extent that it cannot contact the sheet of glass 35. Due to tightening the attachment screw 66, the flexible attachment bush 62 bulges, as a result of which it forms a form-closed and force-closed coupling.

[0029] The first running carriage 50 and the second running carriage 51 only differ from each other in the extension of the cylindrical tube 88 situated at the end of the flights 87. In the first running carriage 50 a steel pin 91 having a straight conical, pointed outer end has been accommodated in it, whereas in the second running carriage 51 a steel pin 92 having a straight conical bore hole has been accommodated in it, which in terms of shape corresponds with or is slightly wider than the pointed outer end. The pointed outer end fits in the blind bore hole up to and including its widest part. The identical flights 87 have been dimensioned such that in travel direction A, the pins 91, 92 end up straight opposite each other and with the pointed outer end facing the blind bore hole.

As shown in figure 2B, the flights 87 are situated partially below the rail 18, wherein the tubes 88 are situated entirely below the rail 18. When the pins 91, 92 engage each other, the flights 87 together form a V-shaped orienting aid, which at the upper side ends near the running wheels 89.

[0030] The sliding doors 30, 31 of the sliding patio doors 1 travel along each other over their individual rail 18. The glass panels 35 are then guided within the lintel 2. Relative to the bottom sill 10, the position of the sliding door 30, 31 can be slightly adjusted by means of its adjusting screws 60, for instance to have the side edge 32 of the first sliding door connect properly to a vertical post of a frame. In that way a slight deviation is allowed in the straightness of the frame into which the sliding patio doors 1 are built. The lintel 2 allows sufficient play for said local adjustment in height. The flights 87 remain positioned straight opposite each other as they are directly coupled to the wheel side of the adjusting foot 80, which does not change relative to the rails 18 upon adjustment. At the end of its stroke, the first sliding door 30 thus always takes along the second sliding door 31 in order to form a contiguous series. The pins 91, 92 then engage each other in a form-closed manner.

[0031] When sliding doors 30, 31 that are elongated in vertical direction, are used in the sliding patio doors 1, then the mass centre of gravity of the heavy glass panels 35 is situated relatively high with respect to the base profile 40. The engagement of the flights 87 causes large mass inertia forces between the sliding doors 30, 31 that take each other along. These forces suffice per se to launch the running wheel 89, situated rearmost in travel direction, from its rail 18, the chances of it ending beside its rail 18 being considerable. The play in the lintel 2 allows such a launch in itself. The form-closed engagement of the pins 91, 92 however, ensures that the sliding door that takes along and the sliding door that is taken along form one unity during the impact, as a result of which the weight and mass inertia of the sliding door that is taken along keeps the rearmost running wheel 89 of the door that takes along, on its rail 18. The peak load on the rigid running carriages 50, 51 is only transmitted to the base profile 40 via the elastic attachment bush 62. It absorbs the peak in the peak load so that it is counteracted that the flights 87 break off. When using a rigid connection member, such as a parker screw, instead of the elastic attachment bush 62, it would get detached after a number of impacts. When the running wheels 89 of the running carriages 50, 51 engaging each other would as yet be launched off of their rail 18, the V-shape in the flights 87 ensures that the running wheels 89 end up straight above their rail 18 again.

Claims

1. Sliding patio doors (1) comprising a bottom sill (10) having parallel rails (18) and a first sliding door (30) and a second sliding door (31) that can be moved over the rails in order to open and close the sliding patio doors, wherein the first sliding door (30) has been provided with a first base profile (40) at the bottom side, to which base profile a first running carriage (50) has been attached and the second sliding door (31) has been provided with a second base profile (40) at the bottom side, to which base profile a second running carriage (51) has been attached with which the sliding doors travel alongside each other over their individual rail, wherein the first running carriage (50) has been provided with a first running wheel (89) and a first flight (87) and the second running carriage (51) has been provided with a second running wheel (89) and a second flight (87), wherein the first flight and the second flight have been positioned for in travel direction (A) contacting each other as a result of which the one sliding door takes along the other sliding door, wherein the first running carriage (50) has been provided with a first adjusting foot (80) to which the first running wheel (89) has been bearing mounted, wherein the first adjusting foot (80) is adjustable relative to the first base profile (40) in order to adjust the height of the first sliding door (30) relative to its rail (18) at the location of the first running carriage, **characterized in that** the first flight (87) has been attached to the first adjusting foot (80).

2. Sliding patio doors (1) according to claim 1, wherein the first adjusting foot has been provided with a first swivelling arm (81) which, with a first hinge (72), is coupled to the first base profile (40) so as to swing, wherein the first running wheel (89) and the first flight (87) in the travel direction are situated spaced apart from the first hinge (72).

3. Sliding patio doors (1) according to any one of the preceding claims, wherein the first running carriage (50) has been provided with a first attachment cassette (52) to which the first adjusting foot (80) has been coupled, wherein the first running carriage (50) has been attached to the first base profile (40) by the first attachment cassette (52).

4. Sliding patio doors (1) according to claims 2 and 3, wherein the first attachment cassette (52) has been provided with a first upper wall (55) and two parallel first side walls (54) in between which the first swivelling arm (81) has been accommodated so as to hinge, wherein the first upper wall (55) has been provided with a first internally threaded channel (57) and an adjusting screw (60), wherein the first channel debouches (57) in the direction of the first adjusting foot (80) and the fist adjusting foot has been provided with a first adjusting edge (85) protruding from the first swivelling arm (81), which adjusting edge (85) at least partially extends in the mouth of the first

channel (57) and is in spot contact with the adjusting screw (60) at a distance from the hinge (72) .

5. Sliding patio doors (1) according to claim 4, wherein the first adjusting edge (85) has a first portion extending parallel to the first swivelling arm (81) and merging into a second portion (86) that is oblique thereto.

6. Sliding patio doors (1) according to any one of the claims 3-5, wherein the first base profile (40) has been provided with an attachment chamber (46) in which the first attachment cassette (52) has been accommodated, wherein the first base profile (40) and the attachment chamber (46) have been provided with attachment edges (47) cooperating with each other and allowing translation of the first base profile (40) relative to the first attachment cassette (52) in the travel direction (A), wherein said translation has been fixated with an elastic coupling (62) between the first base profile (40) and the first attachment cassette (52).

7. Sliding patio doors (1) according to claim 6, wherein the elastic coupling (62) comprises an attachment bush (62) made of an elastic or rubbery material which has been secured to the first base profile (40) by means of an attachment screw (66), wherein the attachment bush has been accommodated or expanded in an opening (61) in the first running carriage (50).

8. Sliding patio doors (1) according to any one of the preceding claims, wherein the first flight (87) and the second flight (87) comprise engagement members (91, 92) that contact each other, and that in the travel direction (A) are situated within the diameter of the first running wheel (89) and second running wheel (89), respectively.

9. Sliding patio doors (1) according to any one of the preceding claims, wherein the first flight (87) and the second flight (87) comprise engagement members (91, 92) that contact each other, wherein the engagement members comprise a tenon member and a mortise member that engage into each other in a form-closed manner.

10. Sliding patio doors (1) according to claim 9, wherein the tenon member is conical, preferably straight conical.

11. Sliding patio doors (1) according to claim 9 or 10, wherein the mortise member comprises a body having a bore hole, preferably a straight conical bore hole.

12. Sliding patio doors (1) according to any one of the claims 8-11, wherein the first running carriage (50) has been provided with a first outrigger (88) and the second running carriage (51) has been provided with a second outrigger (88) to which the engagement members (91, 92) have been attached, wherein the first outrigger (88) and the second outrigger (88) keep the engagement members (91, 92) below the upper running surface of the rails (18).

13. Sliding patio doors (1) according to any one of the preceding claims, wherein the second running carriage (51) has been provided with a second adjusting foot (80) to which the second running wheel (89) has been bearing mounted, wherein the second adjusting foot (80) is adjustable relative to the second base profile (40) in order to adjust the height of the second sliding door (31) relative to its rail (18) at the location of the second running carriage, wherein the second flight (87) has been attached to the second adjusting foot (80).

14. Sliding patio doors (1) according to any one of the preceding claims, wherein the first sliding door (30) and the second sliding door (31) have both been provided with a first running carriage (50) and a second running carriage (51) travelling over the same rail (18), wherein the first running carriage (50) and the second running carriage (51) in the travel direction (A) are spaced apart from each other at the front and rear of the first base profile (40) and the second base profile (40).

Patentansprüche

1. Schiebe-Terrassentüren (1), die eine Bodenschwelle (10) mit parallelen Schienen (18) und eine erste Schiebetür (30) und eine zweite Schiebetür (31) aufweisen, die über die Schienen bewegt werden können, um die Schiebe-Terrassentüren zu öffnen und zu schließen, wobei die erste Schiebetür (30) auf der Unterseite mit einem ersten Basisprofil (40) versehen ist, an dem ein erster Laufschlitten (50) befestigt wurde, und die zweite Schiebetür (31) auf der Unterseite mit einem zweiten Basisprofil (40) versehen wurde, an dem ein zweiter Laufschlitten (51) befestigt wurde, mit dem sich die Schiebetüren nebeneinander über ihre jeweilige Schiene hinweg bewegen, wobei der erste Laufschlitten (50) mit einem ersten Laufrad (89) und einem ersten Ansatz (87) versehen wurde und der zweite Laufschlitten (51) mit einem zweiten Laufrad (89) und einem zweiten Ansatz (87) versehen wurde, wobei der erste Ansatz und der zweite Ansatz so positioniert wurden, dass sie einander in Bewegungsrichtung (A) berühren, was zur Folge hat, dass die eine Schiebetür die andere Schiebetür mitnimmt, wobei der erste Laufschlitten (50) mit einem ersten Justierfuß (80) ver-

sehen wurde, an dem das erste Laufrad (89) mittels eines Lagers angebracht wurde, wobei der erste Justierfuß (80) relativ zu dem ersten Basisprofil (40) justierbar ist, um die Höhe der ersten Schiebetür (30) relativ zu ihrer Schiene (18) an der Stelle des ersten Laufschlittens zu justieren, **dadurch gekennzeichnet, dass** der erste Ansatz (87) an dem ersten Justierfuß (80) befestigt wurde.

2. Schiebe-Terrassentüren (1) gemäß Anspruch 1, bei denen der erste Justierfuß mit einem ersten Schwenkarm (81) versehen wurde, der mit einem ersten Scharnier (72) an das erste Basisprofil (40) gekoppelt ist, um zu schwingen, wobei das erste Laufrad (89) und der erste Ansatz (87) in der Bewegungsrichtung von dem ersten Scharnier (72) beabstandet positioniert sind.

3. Schiebe-Terrassentüren (1) gemäß einem der vorhergehenden Ansprüche, bei denen der erste Laufschlitten (50) mit einer ersten Befestigungskassette (52) versehen wurde, an die der erste Justierfuß (80) gekoppelt wurde, wobei der erste Laufschlitten (50) mittels der ersten Befestigungskassette (52) an dem ersten Basisprofil (40) befestigt wurde.

4. Schiebe-Terrassentüren (1) gemäß Anspruch 2 und 3, bei denen die erste Befestigungskassette (52) mit einer ersten oberen Wand (55) und zwei parallelen ersten Seitenwänden (54) versehen wurde, zwischen denen der erste Schwenkarm (81) untergebracht wurde, um mit einem Scharnier versehen zu werden, wobei die erste obere Wand (55) mit einem ersten mit einem Innengewinde versehenen Kanal (57) und einer Justierschraube (60) versehen wurde, wobei der erste Kanal in die Richtung des ersten Justierfußes (80) einmündet (57) und der erste Justierfuß mit einer ersten Justierkante (85) versehen wurde, die von dem ersten Schwenkarm (81) hervorsteht, wobei diese Justierkante (85) sich zumindest teilweise in der Mündung des ersten Kanals (57) erstreckt und in einem Abstand von dem Scharnier (72) in einem Punktkontakt mit der Justierschraube (60) steht.

5. Schiebe-Terrassentüren (1) gemäß Anspruch 4, bei denen die erste Justierkante (85) einen ersten Abschnitt aufweist, der sich parallel zu dem ersten Schwenkarm (81) erstreckt und in einen zweiten Abschnitt (86), der zu demselben schräg ist, übergeht.

6. Schiebe-Terrassentüren (1) gemäß einem der Ansprüche 3 bis 5, bei denen das erste Basisprofil (40) mit einer Befestigungskammer (46) versehen wurde, in der die erste Befestigungskassette (52) untergebracht wurde, wobei das erste Basisprofil (40) und die Befestigungskammer (46) mit Befestigungskanten (47) versehen wurden, die miteinander zusammenwirken und die eine Verschiebung des ersten Basisprofils (40) relativ zu der ersten Befestigungskassette (52) in der Bewegungsrichtung (A) ermöglichen, wobei diese Verschiebung mit einer elastischen Kopplung (62) zwischen dem ersten Basisprofil (40) und der ersten Befestigungskassette (52) fixiert wurde.

7. Schiebe-Terrassentüren (1) gemäß Anspruch 6, bei denen die elastische Kopplung (62) eine Befestigungsbuchse (62) aufweist, die aus einem elastischen oder gummiartigen Material hergestellt wurde und die mittels einer Befestigungsschraube (66) an dem ersten Basisprofil (40) gesichert wurde, wobei die Befestigungsbuchse in einer Öffnung (61) in dem ersten Laufschlitten (50) untergebracht oder aufgeweitet wurde.

8. Schiebe-Terrassentüren (1) gemäß einem der vorhergehenden Ansprüche, bei denen der erste Ansatz (87) und der zweite Ansatz (87) Ineingriffnahmebauglieder (91, 92) aufweisen, die miteinander in Kontakt stehen und die sich in der Bewegungsrichtung (A) innerhalb des Durchmessers des ersten Laufrades (89) beziehungsweise des zweiten Laufrades (89) befinden.

9. Schiebe-Terrassentüren (1) gemäß einem der vorhergehenden Ansprüche, bei denen der erste Ansatz (87) und der zweite Ansatz (87) Ineingriffnahmebauglieder (91, 92) aufweisen, die miteinander in Kontakt stehen, wobei die Ineingriffnahmebauglieder ein Zapfenbauglied und ein Zapfenlochbauglied aufweisen, die auf formschlüssige Weise miteinander in Eingriff gelangen.

10. Schiebe-Terrassentüren (1) gemäß Anspruch 9, bei denen das Zapfenbauglied konisch ist, vorzugsweise gerade konisch.

11. Schiebe-Terrassentüren (1) gemäß Anspruch 9 oder 10, bei denen das Zapfenlochbauglied einen Körper aufweist, der ein Bohrloch aufweist, vorzugsweise ein gerades konisches Bohrloch.

12. Schiebe-Terrassentüren (1) gemäß einem der Ansprüche 8 bis 11, bei denen der erste Laufschlitten (50) mit einem ersten Ausleger (88) versehen wurde und der zweite Laufschlitten (51) mit einem zweiten Ausleger (88) versehen wurde, an denen die Ineingriffnahmebauglieder (91, 92) befestigt wurden, wobei der erste Ausleger (88) und der zweite Ausleger (88) die Ineingriffnahmebauglieder (91, 92) unter der oberen Laufoberfläche der Schienen (18) halten.

13. Schiebe-Terrassentüren (1) gemäß einem der vorhergehenden Ansprüche, bei denen der zweite Laufschlitten (51) mit einem zweiten Justierfuß (80) ver-

sehen wurde, an dem das zweite Laufrad (89) mittels eines Lagers angebracht wurde, wobei der zweite Justierfuß (80) relativ zu dem zweiten Basisprofil (40) justierbar ist, um die Höhe der zweiten Schiebetür (31) relativ zu ihrer Schiene (18) an der Stelle des zweiten Laufschlittens zu justieren, wobei der zweite Ansatz (87) an dem zweiten Justierfuß (80) befestigt wurde.

14. Schiebe-Terrassentüren (1) gemäß einem der vorhergehenden Ansprüche, bei denen sowohl die erste Schiebetür (30) als auch die zweite Schiebetür (31) mit einem ersten Laufschlitten (50) und einem zweiten Laufschlitten (51) versehen wurden, die sich über dieselbe Schiene hinweg bewegen, wobei der erste Laufschlitten (50) und der zweite Laufschlitten (51) in der Bewegungsrichtung (A) auf der Vorderseite und der Rückseite des ersten Basisprofils (40) und des zweiten Basisprofils (40) voneinander beabstandet sind.

Revendications

1. Portes coulissantes de cour intérieure (1) comprenant un seuil inférieur (10) qui comporte des rails parallèles (18) ainsi qu'une première porte coulissante (30) et une seconde porte coulissante (31) qui peuvent être déplacées sur les rails afin d'ouvrir et de fermer les portes coulissantes de cour intérieure, dans lesquelles la première porte coulissante (30) a été munie d'un premier profil de base (40) au niveau du côté inférieur, profil de base sur lequel un premier chariot de roulement (50) a été fixé, et la seconde porte coulissante (31) a été munie d'un second profil de base (40) au niveau du côté inférieur, profil de base sur lequel un second chariot de roulement (51) a été fixé, chariots à l'aide desquels les portes coulissantes sont déplacées en parallèle l'une à l'autre sur leur rail individuel, dans lesquelles le premier chariot de roulement (50) a été muni d'une première roue de roulement (89) et d'une première partie en débord (87) et le second chariot de roulement (51) a été muni d'une seconde roue de roulement (89) et d'une seconde partie en débord (87), dans lesquelles la première partie en débord et la seconde partie en débord ont été positionnées de telle sorte que, dans une direction de déplacement (A), elles entrent en contact l'une avec l'autre avec pour résultat que la porte coulissante entraîne avec elle l'autre porte coulissante, dans lesquelles le premier chariot de roulement (50) a été muni d'un premier pied de réglage (80) sur lequel la première roue de roulement (89) a été montée à support, dans lesquelles le premier pied de réglage (80) peut être réglé par rapport au premier profil de base (40) afin de régler la hauteur de la première porte coulissante (30) par rapport à son rail (18) au niveau de la localisation du premier chariot de roulement, **caractérisées en ce que** la première partie en débord (87) a été fixée sur le premier pied de réglage (80).

2. Portes coulissantes de cour intérieure (1) selon la revendication 1, dans lesquelles le premier pied de réglage a été muni d'un premier bras articulé (81) qui, avec une première charnière (72), est couplé au premier profil de base (40) de manière à réaliser une oscillation, dans lesquelles la première roue de roulement (89) et la première partie en débord (87), dans la direction de déplacement, sont situées de telle sorte qu'elles soient espacées de la première charnière (72) .

3. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications précédentes, dans lesquelles le premier chariot de roulement (50) a été muni d'une première cassette de fixation (52) sur laquelle le premier pied de réglage (80) a été couplé, dans lesquelles le premier chariot de roulement (50) a été fixé sur le premier profil de base (40) au moyen de la première cassette de fixation (52).

4. Portes coulissantes de cour intérieure (1) selon les revendications 2 et 3, dans lesquelles la première cassette de fixation (52) a été munie d'une première paroi supérieure (55) et de deux premières parois latérales parallèles (54) entre lesquelles le premier bras articulé (81) a été logé de manière à réaliser un effet de charnière, dans lesquelles la première paroi supérieure (55) a été munie d'un premier canal fileté de façon interne (57) et d'une vis de réglage (60), dans lesquelles le premier canal (57) débouche dans la direction du premier pied de réglage (80) et le premier pied de réglage a été muni d'un premier bord de réglage (85) qui fait saillie depuis le premier bras articulé (81), lequel premier bord de réglage (85) s'étend au moins partiellement dans l'embouchure du premier canal (57) et est en contact au niveau de points avec la vis de réglage (60) à une distance de la charnière (72).

5. Portes coulissantes de cour intérieure (1) selon la revendication 4, dans lesquelles le premier bord de réglage (85) comporte une première partie qui s'étend parallèlement au premier bras articulé (81) et qui est fusionnée selon une seconde partie (86) qui est à l'oblique par rapport à ce même bras articulé.

6. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications 3 à 5, dans lesquelles le premier profil de base (40) a été muni d'une chambre de fixation (46) à l'intérieur de laquelle la première cassette de fixation (52) a été logée, dans lesquelles le premier profil de base (40) et la chambre de fixation (46) ont été munis de bords de fixation

(47) qui coopèrent l'un avec l'autre et qui permettent une translation du premier profil de base (40) par rapport à la première cassette de fixation (52) dans la direction de déplacement (A), dans lesquelles ladite translation a été fixée à l'aide d'un couplage élastique (62) entre le premier profil de base (40) et la première cassette de fixation (52).

7. Portes coulissantes de cour intérieure (1) selon la revendication 6, dans lesquelles le couplage élastique (62) comprend une douille de fixation (62) qui est réalisée en un matériau élastique ou caoutchouté, laquelle douille a été fixée de façon ferme et sécurisée sur le premier profil de base (40) au moyen d'une vis de fixation (66), dans lesquelles la douille de fixation a été logée ou étendue dans une ouverture (61) ménagée dans le premier chariot de roulement (50).

8. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications précédentes, dans lesquelles la première partie en débord (87) et la seconde partie en débord (87) comprennent des éléments d'engagement (91, 92) qui entrent en contact l'un avec l'autre et qui, dans la direction de déplacement (A), sont respectivement situés à l'intérieur du diamètre de la première roue de roulement (89) et de la seconde roue de roulement (89).

9. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications précédentes, dans lesquelles la première partie en débord (87) et la seconde partie en débord (87) comprennent des éléments d'engagement (91, 92) qui entrent en contact l'un avec l'autre, dans lesquelles les éléments d'engagement comprennent un élément de tenon et un élément de mortaise qui s'engagent à l'intérieur l'un de l'autre à la façon d'une forme fermée.

10. Portes coulissantes de cour intérieure (1) selon la revendication 9, dans lesquelles l'élément de tenon est conique, de préférence conique à axe droit.

11. Portes coulissantes de cour intérieure (1) selon la revendication 9 ou 10, dans lesquelles l'élément de mortaise comprend un corps qui comporte un alésage, de préférence un alésage conique à axe droit.

12. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications 8 à 11, dans lesquelles le premier chariot de roulement (50) a été muni d'un premier stabilisateur (88) et le second chariot de roulement (51) a été muni d'un second stabilisateur (88), stabilisateurs sur lesquels les éléments d'engagement (91, 92) ont été fixés, dans lesquelles le premier stabilisateur (88) et le second stabilisateur (88) maintiennent les éléments d'engagement (91, 92) en dessous de la surface de roulement supérieure des rails (18).

13. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications précédentes, dans lesquelles le second chariot de roulement (51) a été muni d'un second pied de réglage (80) sur lequel la seconde roue de roulement (89) a été montée à support, dans lesquelles le second pied de réglage (80) peut être réglé par rapport au second profil de base (40) de manière à régler la hauteur de la seconde porte coulissante (31) par rapport à son rail (18) au niveau de la localisation du second chariot de roulement, dans lesquelles la seconde partie en débord (87) a été fixée sur le second pied de réglage (80).

14. Portes coulissantes de cour intérieure (1) selon l'une quelconque des revendications précédentes, dans lesquelles la première porte coulissante (30) et la seconde porte coulissante (31) ont toutes deux été munies d'un premier chariot de roulement (50) et d'un second chariot de roulement (51) qui se déplacent sur le même rail (18), dans lesquelles le premier chariot de roulement (50) et le second chariot de roulement (51), dans la direction de déplacement (A), sont espacés l'un de l'autre à l'avant et à l'arrière du premier profil de base (40) et du second profil de base (40) .

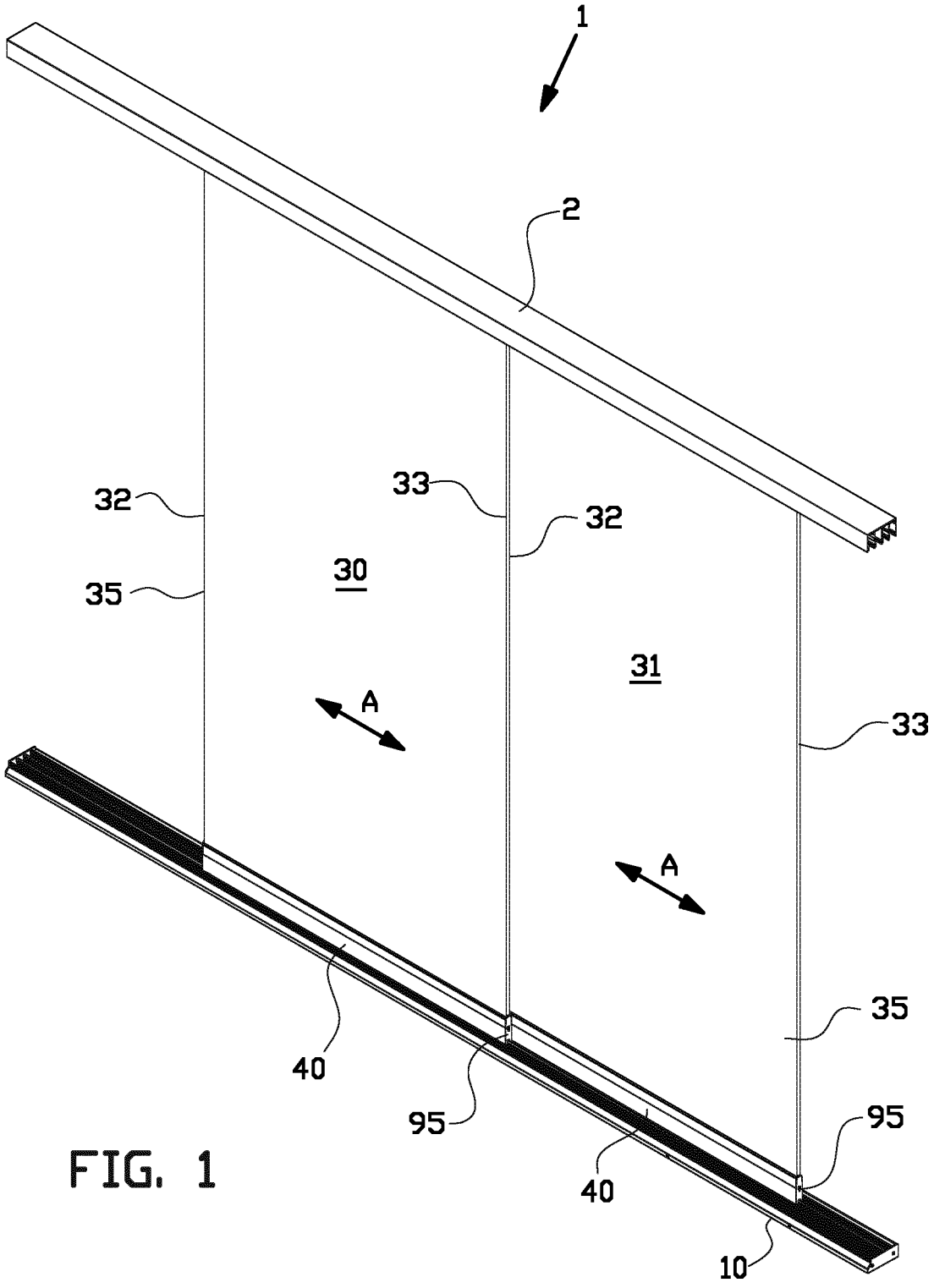


FIG. 1

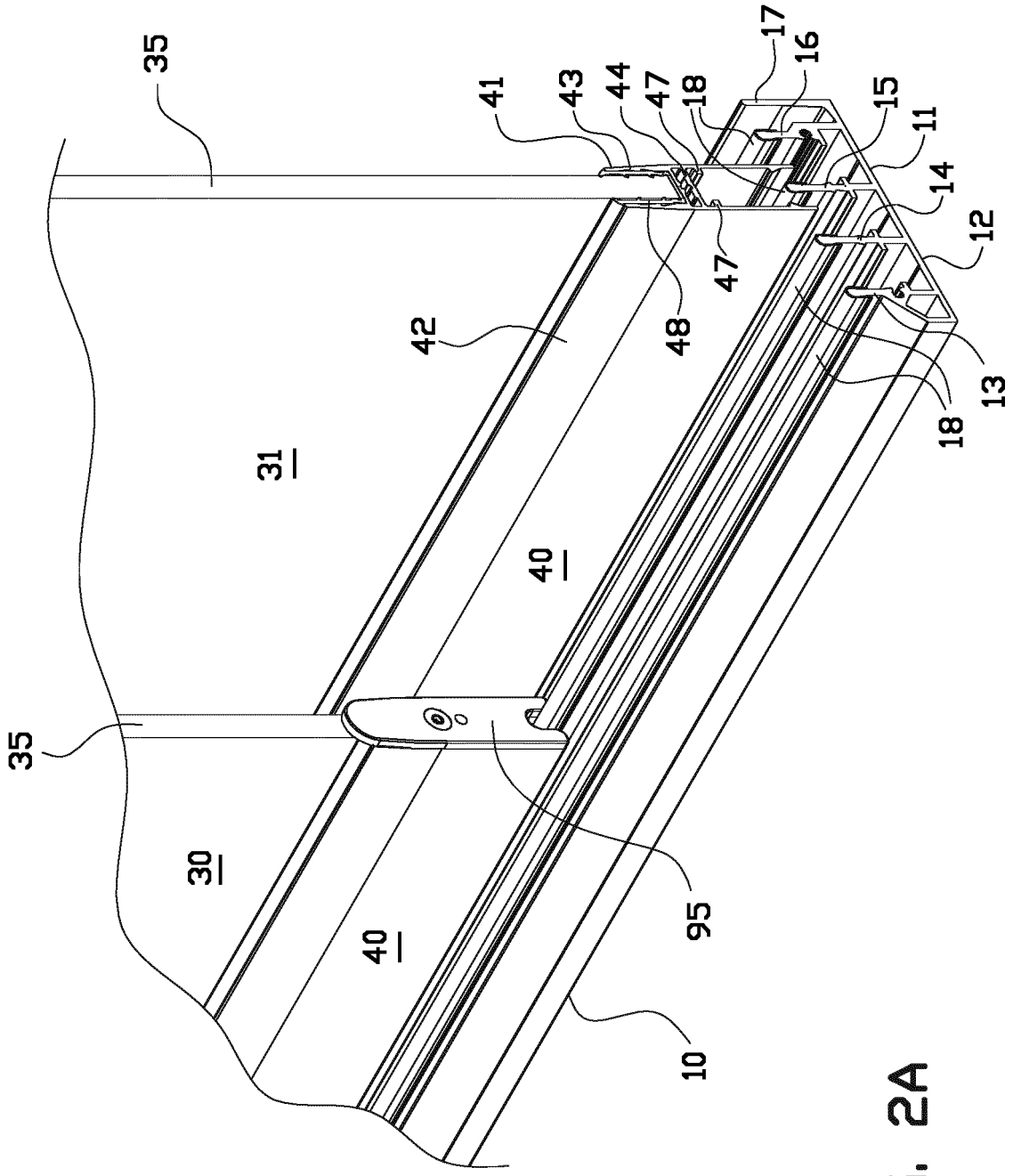


FIG. 2A

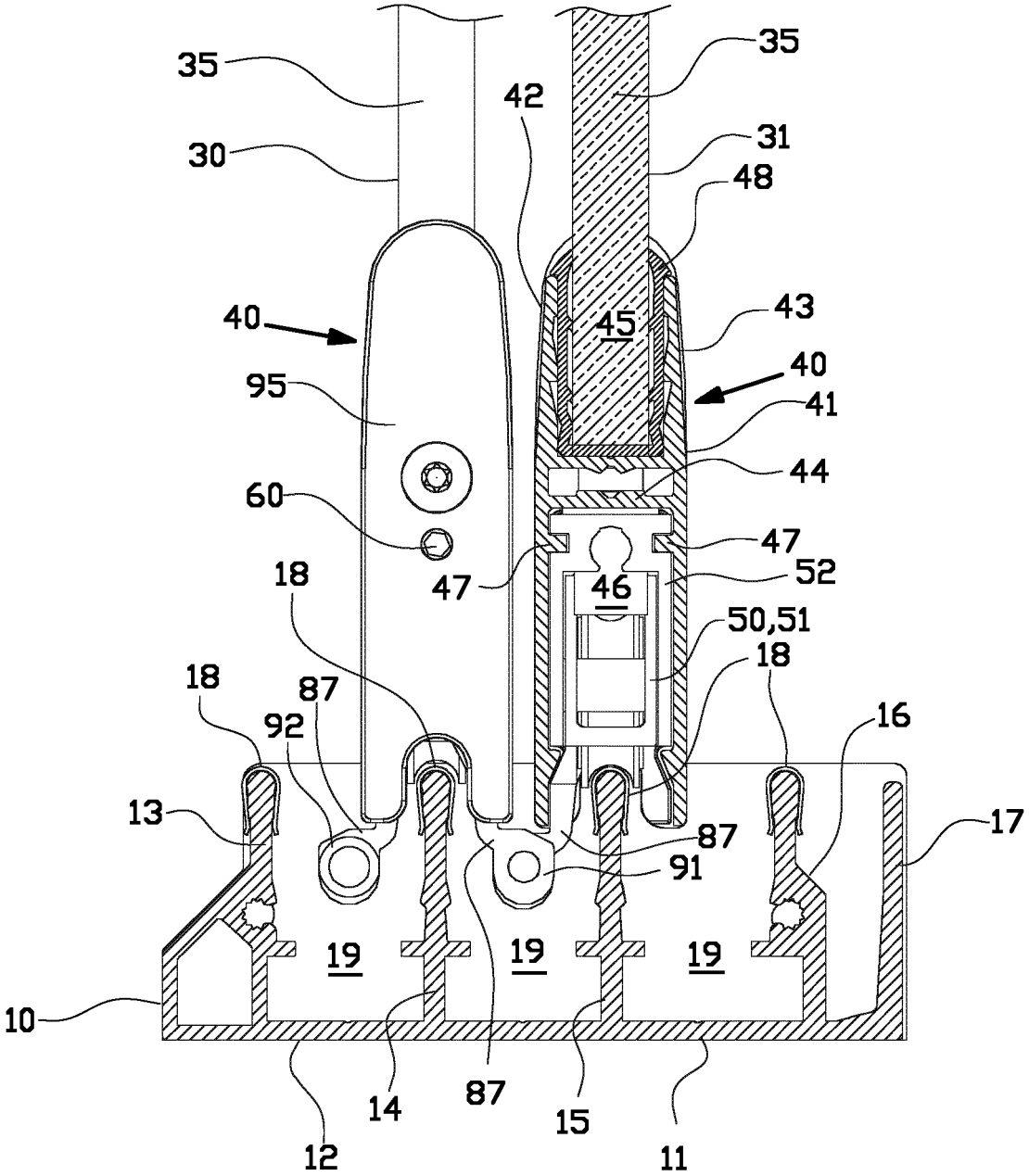

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FIG. 2B

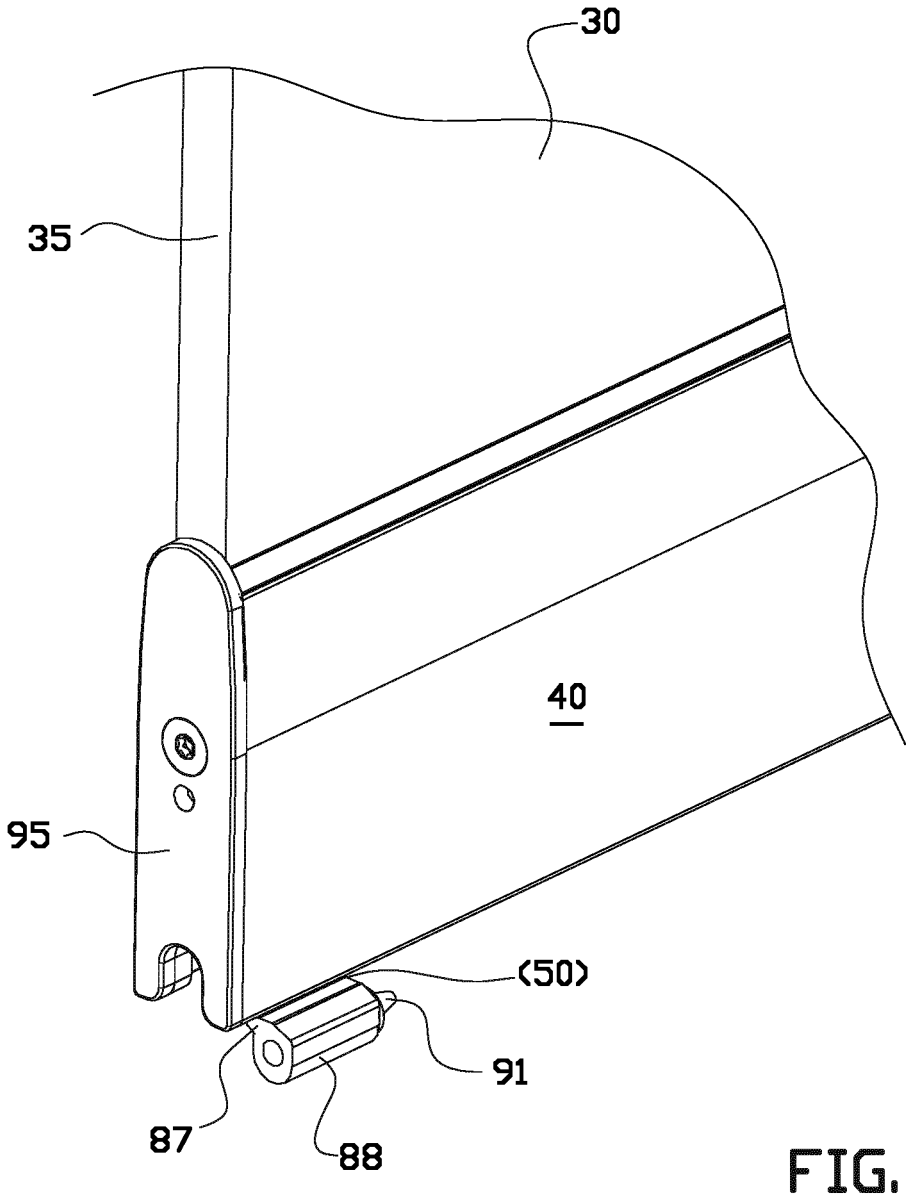


FIG. 2C

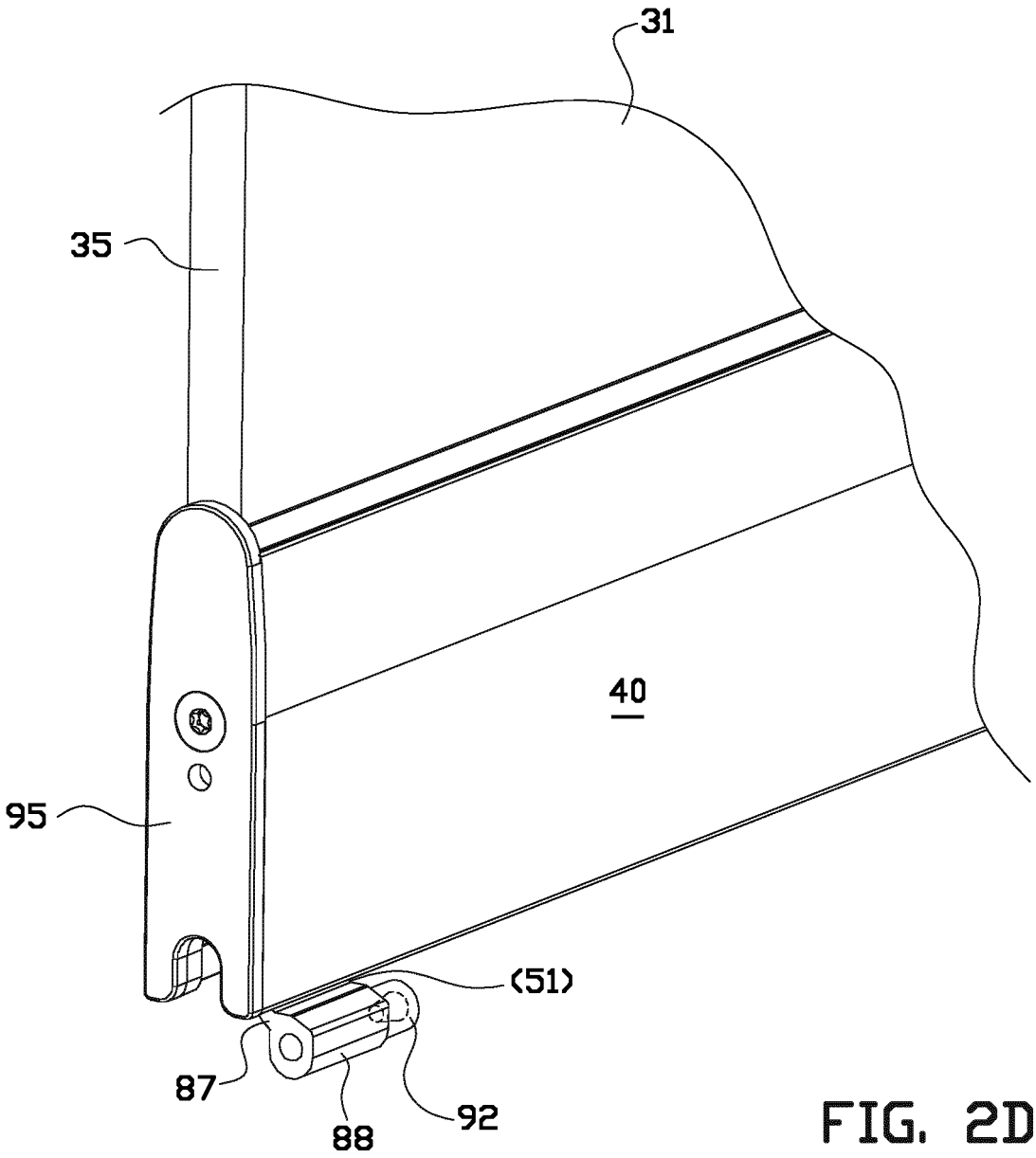


FIG. 2D

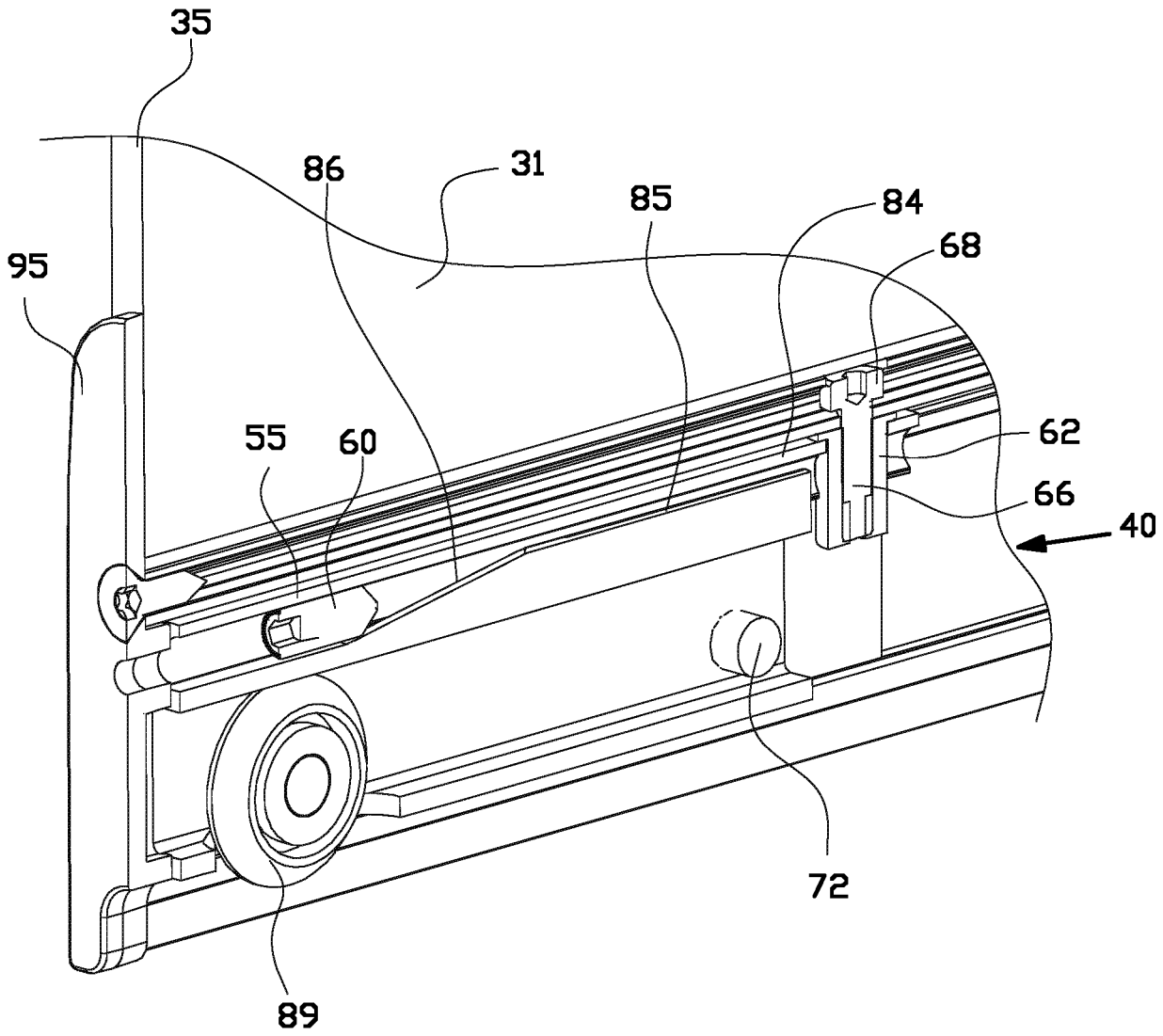


FIG. 2E

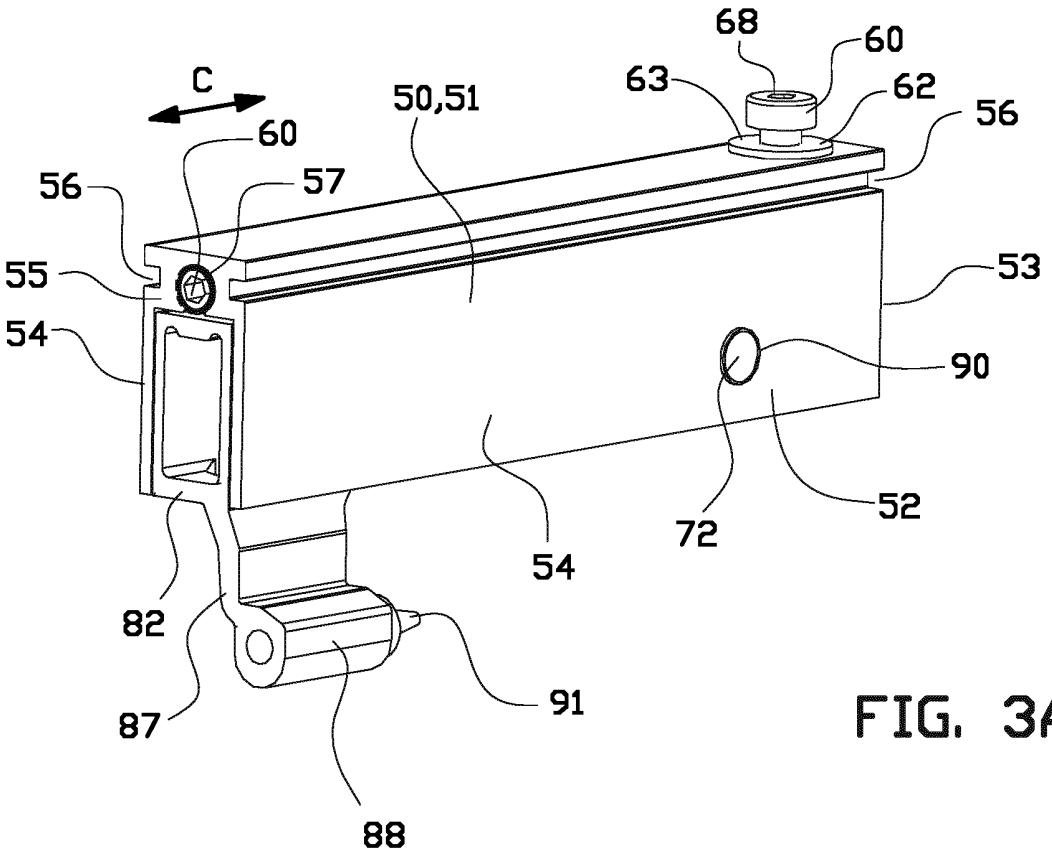

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FIG. 3A

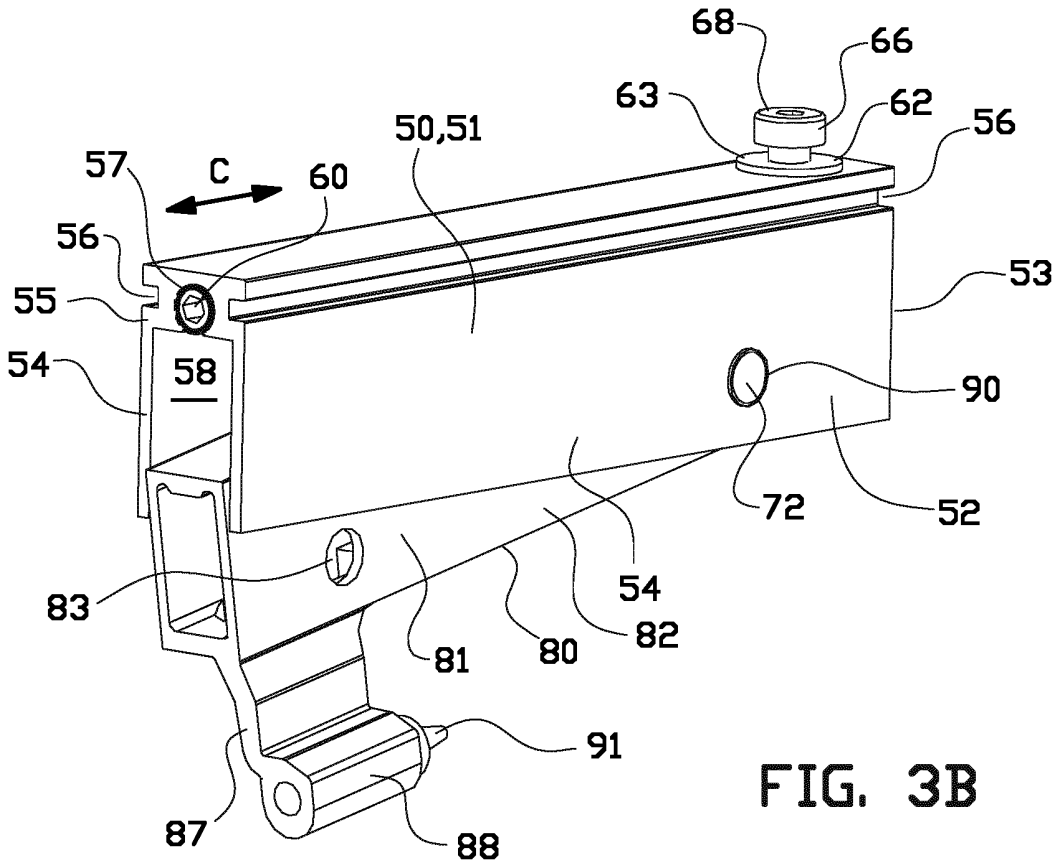

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FIG. 3B

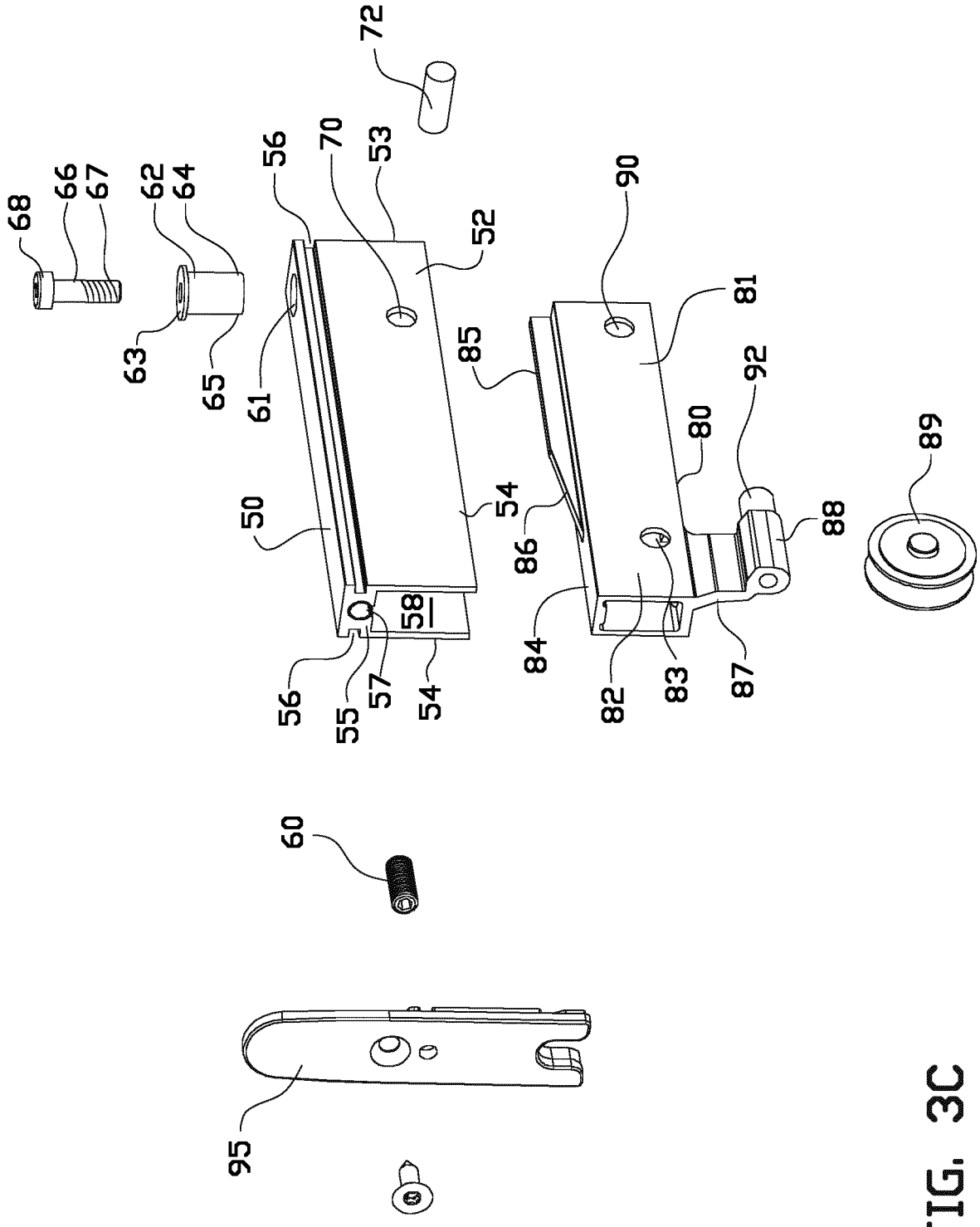

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FIG. 3C

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2476840 A **[0003]**