(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 January 2017 (19.01.2017)

WIPO | PCT

(10) International Publication Number
WO 2017/011070 A1

(51) International Patent Classification:
A47C 17/04 (2006.01) *A47C 7/62* (2006.01)
A47C 7/50 (2006.01)

(21) International Application Number:
PCT/US2016/032967

(22) International Filing Date:
18 May 2016 (18.05.2016)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
14/798,867 14 July 2015 (14.07.2015) US

(71) Applicant: **LA-Z-BOY INCORPORATED** [US/US]; One La-Z-Boy Drive, Monroe, Michigan 48162 (US).

(72) Inventors: **LAPOINTE, Larry P.**; 1066 Substation Road, Temperance, Michigan 48182 (US). **ADAMS, Chad E.**; 29084 E. Winners Circle Dr., Perrysburg, Ohio 43551 (US). **RAINES, Jason**; 238 Mountainside Lane, Evensville, Tennessee 37332 (US). **BRYSON, Jason**; 1013 Valley Drive, Athens, Tennessee 37303 (US).

(74) Agents: **KELLER, Paul A.** et al.; Harness, Dickey & Pierce, P.L.C., P.O. Box 828, Bloomfield Hills, Michigan 48303 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: RECLINER AND LEGREST MECHANISM FOR A FURNITURE MEMBER

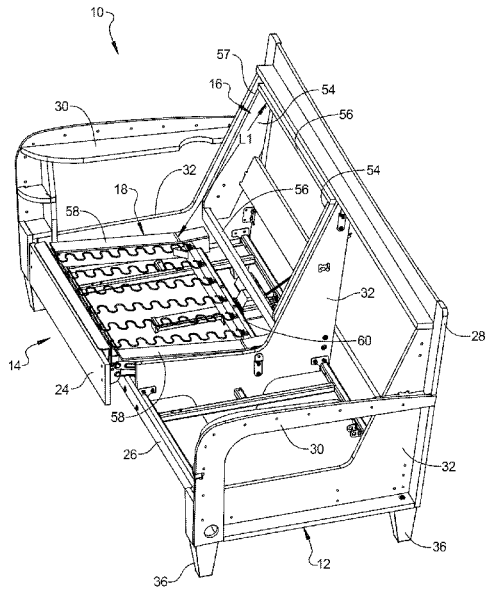

FIG 1

(57) Abstract: A furniture member may include a stationary base frame, a seatback frame, a seat bottom frame and a linkage. The seatback frame is supported by the base frame and is pivotable relative to the base frame. The seat bottom frame maybe supported by the base frame and may be movable relative to the seatback frame and the base frame. The linkage is attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform. The linkage is movable between first and second positions. Movement of the linkage toward the first position causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position. Movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position.

WO 2017/011070 A1

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*

RECLINER AND LEGREST MECHANISM FOR A FURNITURE MEMBER

FIELD

[0001] The present disclosure relates to a recliner and legrest mechanism for a furniture member.

BACKGROUND

[0002] This section provides background information related to the present disclosure and is not necessarily prior art.

[0003] Furniture members (e.g., chairs, sofas, loveseats, etc.) can include a legrest that can be extended and retracted and a seatback that can be reclined. Such functionality is often a tradeoff with aesthetic design. That is, the aesthetic design options of such conventional motion furniture members are often limited to accommodate mechanisms that enable deploying and stowing the legrest and moving the seatback and seat bottom. Conventional recliner and legrest mechanisms prohibit certain aesthetic design features and styles that are popular in modern stationary furniture members. The present disclosure provides furniture members that incorporate recliner and legrest mechanisms into an overall design that incorporates desirable aesthetic design features that are not feasible with conventional mechanisms.

SUMMARY

[0004] This section provides a general summary of the disclosure, and is not a comprehensive disclosure of its full scope or all of its features.

[0005] In one form, the present disclosure provides a furniture member that may include a stationary base frame, a seatback frame, a seat bottom frame and a linkage. The seatback frame may be supported by the base frame and may be pivotable relative to the base frame. The seat bottom frame maybe supported by the base frame and may be movable relative to the seatback frame and the base frame. The linkage may be attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform. The linkage may

be movable between a first position and a second position. Movement of the linkage toward the first position may cause the seatback frame to move toward a fully upright position and may simultaneously cause the legrest platform to move toward a stowed position. Movement of the linkage toward the second position may cause the seatback frame to move toward a fully reclined position and simultaneously cause the legrest platform to move toward a fully extended position.

[0006] In some configurations, the seatback frame is pivotable relative to the base frame about an axis extending through an upper portion (e.g., at or near a vertically upper end) of the seatback frame.

[0007] In some configurations, the base frame hides the entire linkage from view when the linkage is in the first position.

[0008] In some configurations, the linkage is powered by a single motor movable in a first direction to move the seatback from the fully upright position to the fully reclined position while simultaneously moving the legrest platform from the stowed position to the fully extended position. The single motor may be movable in a second direction to move the seatback from the fully reclined position to the fully upright position while simultaneously moving the legrest platform from the fully extended position to the stowed position.

[0009] In some configurations, the motor moves a slide member linearly along a guide member. The slide member may be rotatably attached to the seat bottom frame, and the guide member may be rotatably attached to the base frame.

[0010] In some configurations, the linkage includes a track assembly including a first member and a second member that is translatable along a length of the first member. The second member may be rotatably coupled with a platform bracket supporting the legrest platform.

[0011] In some configurations, the linkage includes a throw arm that is coupled to the first member for rotation relative to the first member and translation with the first member relative to the second member.

[0012] In some configurations, the throw arm is rotatably coupled to an extension link that is rotatably coupled to the platform bracket.

[0013] In some configurations, the base frame includes a first roller that is received in a curved track of the first member.

[0014] In some configurations, the base frame includes a second roller that is received in another track fixedly attached to the seat bottom frame.

[0015] In some configurations, the throw arm is rotatably coupled to first, second and third links at three different locations along a length of the throw arm.

[0016] In some configurations, rotation of the throw arm determines timing of movement of the seatback frame, the seat bottom frame and the legrest platform relative to the base frame.

[0017] In some configurations, the base frame is configured for a single seat assembly.

[0018] In some configurations, the base frame is configured for a plurality of seat assemblies.

[0019] In some configurations, the linkage includes a first curved track and a second curved track. The first curved track may movably receive a first roller attached to the base frame and a second roller attached to the seat bottom frame. The second curved track may receive a third roller attached to the first curved track to allow for relative telescoping movement between the first and second curved tracks. The second curved track may rotatably support the legrest platform.

[0020] In some configurations, the seat bottom frame includes a third curved track member fixedly attached thereto. The third curved track member may receive a fourth roller attached to the base frame.

[0021] In some configurations, the second curved track is shaped to provide a downward dipping movement of the legrest platform during initial movement of the linkage from the first position to the second position. Furthermore, the second curved track may be shaped to subsequently extend and lift the legrest platform in response to continued movement of the linkage toward the second position.

[0022] In some configurations, the linkage includes a curved track member and a pantograph linkage. The curved track member may movably receive a first roller attached to the base frame and a second roller attached to

the seat bottom frame. The pantograph linkage may be movably supported by the curved track member and may movably support the legrest platform.

[0023] In some configurations, movement of the curved track member relative to the base frame moves the legrest platform relative to the base frame.

[0024] In some configurations, movement of the pantograph linkage relative to the curved track member extends and lifts the legrest platform relative to the base frame.

[0025] In some configurations, the linkage is packaged within a space having a depth dimension of about 28 to 32 inches (e.g., 30 inches) when the linkage is in the fully stowed position and is configured to extend the legrest platform to about 18 to 20 inches (e.g., 19 inches) in front of the seat bottom frame in the fully extended position. The depth dimension extends parallel to a floor upon which the furniture member is situated between fore and aft ends of the furniture member.

[0026] In some configurations, the base frame includes legs that are about five to six inches (e.g., 5.5 inches) tall, and the linkage is disposed entirely above top ends of the legs in the fully stowed position.

[0027] In some configurations, a vertical distance between the floor and a top of the seat bottom frame is about 11 to 12 inches (e.g., 11.5 inches) in the fully stowed position.

[0028] In some configurations, the seat bottom frame travels forward relative to the base frame by about six to eight inches (e.g., 7 inches).

[0029] In some configurations, the seat bottom frame separates from the seatback frame as the linkage moves from the fully stowed position to the fully extended position.

[0030] In another form, the present disclosure provides a furniture member that may include a stationary base frame, first and second seatback frames, first and second seat bottom frames, and an upholstery system. The first and second seatback frames may be supported by the base frame and may be pivotable relative to each other and the base frame about an axis extending through upper portions of the first and second seatback frames. The first and second seatback frames are pivotable between upright and reclined positions.

The first and second seat bottom frames may be supported by the base frame and may be movable relative to the first and second seatback frames and the base frame. The upholstery system may include a unitary seatback upholstery sheet covering the first and second seatback frames, a first seat bottom upholstery sheet covering the first seat bottom frame, and a second seat bottom upholstery sheet covering the second seat bottom frame. The seatback upholstery sheet including an upper portion, a first lower portion corresponding to the first seatback frame, and a second lower portion corresponding to the second seatback frame. The first and second lower portions may be independently movable relative to the upper portion.

[0031] In some configurations, the first and second lower portions of the seatback upholstery sheet are separated from the first and second seat bottom upholstery sheets when the first and second seatback frames are in the reclined position.

[0032] In some configurations, the first and second lower portions of the seatback upholstery sheet are in contact with the first and second seat bottom upholstery sheets, respectively, when the first and second seatback frames are in the upright position.

[0033] Further areas of applicability will become apparent from the description provided herein. The description and specific examples in this summary are intended for purposes of illustration only and are not intended to limit the scope of the present disclosure.

DRAWINGS

[0034] The drawings described herein are for illustrative purposes only of selected embodiments and not all possible implementations, and are not intended to limit the scope of the present disclosure.

[0035] Figure 1 is a perspective view of a furniture member having a seat assembly with a recliner and legrest mechanism in a stowed position (another seat assembly of the furniture member has been removed for clarity);

[0036] Figure 2a is a side view of the furniture member of Figure 1 with the mechanism in the stowed position;

[0037] Figure 2b is another side view of the furniture member of Figure 1 with the mechanism in the stowed position and with a portion of a base frame removed for clarity;

[0038] Figure 3 is a perspective view of the furniture member of Figure 1 with the recliner and legrest mechanism in an extended position;

[0039] Figure 4 is a side view of the furniture member of Figure 1 with the mechanism in the extended position and with the portion of the base frame removed for clarity;

[0040] Figure 5 is another perspective view of the furniture member of Figure 1 with the recliner and legrest mechanism in the extended position;

[0041] Figure 6 is a partial perspective view of the furniture member of Figure 1 with the recliner and legrest mechanism in the extended position;

[0042] Figure 7 is another perspective view of the furniture member of Figure 1 with the recliner and legrest mechanism in the extended position;

[0043] Figure 8 is a perspective view of the recliner and legrest mechanism in the stowed position;

[0044] Figure 9 is another perspective view of the recliner and legrest mechanism in the stowed position;

[0045] Figure 10 is a side view of the recliner and legrest mechanism in the stowed position;

[0046] Figure 11 is another side view of the recliner and legrest mechanism in the stowed position;

[0047] Figure 12 is a side view of the recliner and legrest mechanism in the extended position;

[0048] Figure 13 is another side view of the recliner and legrest mechanism in the extended position;

[0049] Figure 14 is a perspective view of another furniture member having a seat assembly with a recliner and legrest mechanism in a stowed position;

[0050] Figure 15 is a side view of the furniture member of Figure 14 with the recliner and legrest mechanism in the stowed position;

[0051] Figure 16 is another side view of the furniture member of Figure 14 with the mechanism in the stowed position and with a portion of a base frame removed for clarity;

[0052] Figure 17 is a side view of the furniture member of Figure 14 with the mechanism in the extended position and with the portion of the base frame removed for clarity;

[0053] Figure 18 is another side view of the furniture member of Figure 14 with the mechanism in the extended position and with another portion of the base frame removed for clarity;

[0054] Figure 19 is a perspective view of the furniture member of Figure 14 with the mechanism in the extended position;

[0055] Figure 20 is a partial perspective view of the furniture member of Figure 14 with the mechanism in the extended position;

[0056] Figure 21 is a perspective view of a portion of the mechanism in a position between the stowed and extended positions;

[0057] Figure 22 is another perspective view of the portion of the mechanism in the position of Figure 21;

[0058] Figure 23 is a side view of the portion of the mechanism in the position of Figure 21;

[0059] Figure 24 is another side view of the portion of the mechanism in the position of Figure 21;

[0060] Figure 25 is a perspective view of the furniture member of Figure 1 in the stowed position having an upholstery system according to the principles of the present disclosure;

[0061] Figure 26 is a perspective view of the furniture member of Figure 25 in the extended position;

[0062] Figure 27 is a partial perspective view of the furniture member of Figure 25 in the extended position; and

[0063] Figure 28 is another partial perspective view of the furniture member of Figure 25 in the extended position.

[0064] Corresponding reference numerals indicate corresponding parts throughout the several views of the drawings.

DETAILED DESCRIPTION

[0065] Example embodiments will now be described more fully with reference to the accompanying drawings.

[0066] Example embodiments are provided so that this disclosure will be thorough, and will fully convey the scope to those who are skilled in the art. Numerous specific details are set forth such as examples of specific components, devices, and methods, to provide a thorough understanding of embodiments of the present disclosure. It will be apparent to those skilled in the art that specific details need not be employed, that example embodiments may be embodied in many different forms and that neither should be construed to limit the scope of the disclosure. In some example embodiments, well-known processes, well-known device structures, and well-known technologies are not described in detail.

[0067] The terminology used herein is for the purpose of describing particular example embodiments only and is not intended to be limiting. As used herein, the singular forms "a," "an," and "the" may be intended to include the plural forms as well, unless the context clearly indicates otherwise. The terms "comprises," "comprising," “including,” and “having,” are inclusive and therefore specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof. The method steps, processes, and operations described herein are not to be construed as necessarily requiring their performance in the particular order discussed or illustrated, unless specifically identified as an order of performance. It is also to be understood that additional or alternative steps may be employed.

[0068] When an element or layer is referred to as being "on," “engaged to,” "connected to," or "coupled to" another element or layer, it may be directly on, engaged, connected or coupled to the other element or layer, or intervening elements or layers may be present. In contrast, when an element is referred to as being "directly on," “directly engaged to,” "directly connected to," or "directly coupled to" another element or layer, there may be no intervening elements or layers present. Other words used to describe the relationship between elements

should be interpreted in a like fashion (e.g., “between” versus “directly between,” “adjacent” versus “directly adjacent,” etc.). As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

[0069] Although the terms first, second, third, etc. may be used herein to describe various elements, components, regions, layers and/or sections, these elements, components, regions, layers and/or sections should not be limited by these terms. These terms may be only used to distinguish one element, component, region, layer or section from another region, layer or section. Terms such as “first,” “second,” and other numerical terms when used herein do not imply a sequence or order unless clearly indicated by the context. Thus, a first element, component, region, layer or section discussed below could be termed a second element, component, region, layer or section without departing from the teachings of the example embodiments.

[0070] Spatially relative terms, such as “inner,” “outer,” "beneath," "below," "lower," "above," "upper," and the like, may be used herein for ease of description to describe one element or feature's relationship to another element(s) or feature(s) as illustrated in the figures. Spatially relative terms may be intended to encompass different orientations of the device in use or operation in addition to the orientation depicted in the figures. For example, if the device in the figures is turned over, elements described as "below" or "beneath" other elements or features would then be oriented "above" the other elements or features. Thus, the example term "below" can encompass both an orientation of above and below. The device may be otherwise oriented (rotated 90 degrees or at other orientations) and the spatially relative descriptors used herein interpreted accordingly.

[0071] With reference to Figures 1-6, a furniture member 10 is provided that may include a base frame 12, and one or more seat assemblies 14 (only one of which is shown in the figures). Each seat assembly 14 includes a seatback frame 16, a seat bottom frame 18, and a recliner and legrest mechanism 19. The mechanism 19 may include a pair of linkages 20 (only one of which is shown in the figures), and an actuator assembly 22 (Figure 5). The actuator assembly 22 and linkages 20 cooperate to move the seatback frame 16

and seat bottom frame 18 relative to each other and relative to the base frame 12, while simultaneously moving a legrest platform 24 relative to the frames 12, 16, 18 between a stowed position (Figures 1, 2a and 2b) and an extended position (Figures 3 and 4). As will be described in more detail below, movement of the linkages 20 from the stowed position to the extended position also moves the seatback frame 16 from an upright position to a reclined position.

[0072] As shown in Figures 1 and 5, the base frame 12 may be a fixed construction including a forward support 26, an aft support 28, a pair of armrests 30, a plurality of lateral supports 32, a plurality of seat-support frames 34, and a plurality of legs 36. The lateral supports 32 extend between the forward support 26 and the aft support 28 adjacent the seatback frames 16 and the seat bottom frames 18. As shown in Figures 1 and 3, each seat assembly 14 is attached to and disposed between adjacent lateral supports 32.

[0073] Each of the seat-support frames 34 are disposed beneath and support a corresponding one of the seat assemblies 14. As shown in Figure 5, each seat-support frame 34 may include front and rear rails 38, 40 and a pair of intermediate rails 42. The front and rear rails 38, 40 extend between and are fixedly attached to adjacent lateral supports 32. The intermediate rails 42 extend between and are fixedly attached to the front and rear rails 38, 40. Each of the intermediate rails 42 has a support member 44 mounted thereto and extending laterally outward therefrom. A first bracket 46 with a first roller 48 may be mounted on each of the support members 44 (see Figure 6)(only one of the first brackets 46 and one of the first rollers 48 are shown in the figures). A second bracket 50 with a second roller 52 may be mounted on the front end of each of the intermediate rails 42 (see Figures 5 and 6) (only one of the second brackets 50 and one of the second rollers 52 are shown in the figures).

[0074] As shown in Figures 1 and 3, each seatback frame 16 may support a seatback cushion (not shown) and may include a pair of lateral support members 54 and a pair of cross members 56 extending between the support members 54. As shown in Figures 1-4, vertically upper ends 57 of the lateral support members 54 may be pivotably attached to the lateral supports 32 of base frame 12 via hinge brackets 59.

[0075] Because the seatback frame 16 pivots about an axis extending through the upper end of the seatback frame 16, there is no need for any clearance between the rearward-most part of the furniture member 10 (i.e., the aft support 28 of the base frame 12) and a wall (not shown) of a room (not shown) in which the furniture member 10 is situated. That is, the aft support 28 (and the rest of the base frame 12) remains stationary while the seatback frame 16 moves between the upright and reclined positions, and movement of the seatback frame 16 into the reclined position does not cause any portion of the furniture member 10 to move any further rearward than the aft support 28. Therefore, the furniture member 10 can be placed in any desired position within the room, including a position in which the aft support 28 contacts the wall when the seatback frame 16 is in the upright position, and the seatback frame 16 can be fully reclined within the furniture member 10 remaining in the desired position within the room. Furthermore, the aft support 28 could have a angled configuration (where the aft support 28 is at a non-perpendicular angle relative to the floor, as shown in Figures 1-4) or a vertical configuration (where the aft support 28 is perpendicular to the floor).

[0076] Each seat bottom frame 18 may support a seatback cushion (not shown) and may include a pair of lateral support members 58 and a pair of cross members 60 extending between the support members 58. Each of the lateral support members 58 of the seat bottom frame 18 may include a curved track 62 (Figures 5 and 6) that movably receive the second rollers 52 attached to intermediate rails 42 of the base frame 12. As shown in Figures 1-4, the linkages 20 are coupled to the lateral support members 54, 58 of the seatback and seat bottom frames 16, 18 such that movement of the linkages 20 between the stowed position (Figures 1, 2a and 2b) and the extended position (Figures 3 and 4) causes corresponding movement of the seatback frame 16 and the seat bottom frame 18 relative to the base frame 12 and relative movement between the seatback frame 16 and the seat bottom frame 18, as will be described in more detail below. The curved tracks 62 of the seat bottom frame 18 move relative to the second rollers 52 as the linkages 20 move between the stowed

and extended positions so that the base frame 12 can movably support the seat bottom frame 18.

[0077] As shown in Figures 8-13, each linkage 20 may include a recliner linkage 64, a swing linkage 66, an extension link 68 and a telescoping support track assembly 70. The recliner linkages 64 are connected to the seatback frame 16 and causes the seatback frame 16 to recline (i.e., pivot about hinge brackets 59) as the mechanism 19 moves between the stowed and extended positions. Each recliner linkage 64 may include a first mounting link 72, a first connecting link 74 and a second connecting link 76. The first mounting link 72 may be fixedly attached to a corresponding one of the lateral support members 54 of the seatback frame 16, as shown in Figure 5. As shown in Figures 8 and 9, opposite ends of the first connecting link 74 may be rotatably coupled to the first mounting link 72 and the second connecting link 76, respectively.

[0078] As shown in Figures 9 and 12, the swing linkage 66 may include a second mounting link 78, a first swing link 80, a second swing link 82 and a third swing link 83. The second mounting link 78 may be fixedly attached to a corresponding one of the lateral supports 32 of the base frame 12, as shown in Figures 5 and 6. As shown in Figures 9 and 12, the first swing link 80 may include first and second legs 84, 86 cooperating to form a generally L-shaped member. A distal end of the first leg 84 may be rotatably connected to the second mounting link 78. The second swing link 82 may be a generally triangular shaped member and may be connected at a first corner to an intermediate portion of the first swing link 80 (i.e., at or near an intersection of the first and second legs 84, 86), as shown in Figures 9 and 12. A second corner of the second swing link 82 may be rotatably connected to the third swing link 83. In some configurations, a third corner of the second swing link 82 could be connected to a distal end of the second leg 86 of the first swing link 80 by a spring (not shown) or other resiliently stretchable member. The first corner of the second swing link 82 and/or the intermediate portion of the first swing link 80 may be rotatably coupled to a first intermediate link 88 (Figures 9 and 12). The first intermediate link 88 may also be rotatably coupled to the second connecting

link 76 of the recliner linkage 64. A central portion of the second swing link 82 may be rotatably coupled to a second intermediate link 90 (Figures 9 and 12).

[0079] As shown in Figures 8, 9, 12 and 13, the telescoping support track assembly 70 may include a curved first track member 91 and a curved second track member 93 that are slidably attached to each other so that the second track member 93 can slide outward relative to the first track member 91 as the mechanism 19 moves from the stowed position to the extended position. For example, one or more third rollers 47 (Figures 7 and 8) may be attached to the first track member 91 and may rollingly engage the second track member 93 to facilitate the relative movement between the first and second track members 91, 93. A distal end portion 99 (Figures 8 and 9) of the second track member 93 may be angled relative to the rest of the second track member 93 such that the end portion 99 extends downward as the end portion 99 extends outward from the rest of the second track member 93.

[0080] As shown in Figures 10, 12 and 13, the second track member 93 and the extension link 68 are rotatably coupled to a third mounting bracket 94 to which the legrest platform 24 is fixedly mounted (Figure 5). As shown in Figure 6, the first track member 91 receives the first roller 48 so that the intermediate rail 42 can support the first track member 91 while allowing the first track member 92 to move relative to the first roller 48. The first track member 91 may also receive a fourth roller 49 (Figure 7) attached to the seat bottom frame 18 so that the first track member 91 can support the seat bottom frame 18. In some configurations, the first track member 91 may be fixedly attached to and support a chaise panel support member 95 (Figure 5) that may support one or more foldable chaise panels 97.

[0081] As shown in Figures 10, 12 and 13, a throw arm 92 may movably connect the swing linkage 66 to the extension link 68 and the support track assembly 70. A first end of the throw arm 92 may be rotatably coupled to an end of the second intermediate link 90. The first end of the throw arm 92 is also rotatably coupled to the first track member 91. A connecting link 98 may be rotatably coupled to a second end of the throw arm 92 and rotatably coupled to the second track member 93. A first intermediate portion of the throw arm 92

may be rotatably coupled to the extension link 68. A second intermediate portion of the throw arm 92 (between the first end and the first intermediate portion) may be rotatably coupled to the third swing link 83. In some configurations, rotation of the throw arm 92 determines timing of movement of the seatback frame 16, the seat bottom frame 18 and the legrest platform 24 (extension and rotation of the legrest platform 24) relative to the base frame.

[0082] As shown in Figures 5 and 6, the actuator assembly 22 may include a motor 100, a guide member 102 and a slide member 104. The guide member 102 may be rotatably coupled to the rear rail 40 of the base frame 12 by brackets 106. The slide member 104 may be slidable along the guide member 102 and may be rotatably coupled to the seat bottom frame 18 by brackets 108. Operation of the motor 100 in a first direction may cause the slide member 104 to move along the guide member 102 away from the motor 100, which causes the seat bottom frame 18 and the linkages 20 to move toward the extended position, which in turn, causes the seatback frame 16 to simultaneously move toward a reclined position. Operation of the motor 100 in a second direction may cause the slide member 104 to move along the guide member 102 toward the motor 100, which causes the seat bottom frame 18 and the linkages 20 to move toward the stowed position, which in turn, causes the seatback frame 16 to simultaneously move toward an upright position. Because the linkages 20 are able to simultaneously move the legrest platform 24, the seat bottom frame 18 and the seatback frame 16, the mechanism 19 only needs to incorporate a single motor (rather than one motor for legrest extension and another for seatback reclining). Therefore, a two-button controller can be implemented to control the motor 100 (e.g., one button for moving the mechanism 19 toward the extended position, and another button for moving the mechanism 19 toward the stowed position).

[0083] As the mechanism 19 moves between the stowed and extended positions, the curved first track member 91 provides a curved guide path for seat bottom, seatback and legrest movement. The curved form of the second track member 93 is shaped to provide: (1) a slight dipping movement during the initial extension of the linkage 20 so that the upholstery of the legrest platform 24 will

clear the upholstery of the seat bottom (i.e., as one of the rollers 47 attached to the first track member 91 traverses the angled distal end portion 99 (Figures 8 and 9) of the second track member 93); and (2) subsequent movement (as the linkage 20 continues to move toward the extended position) that extends and lifts the legrest platform 24 to lift and support the occupant's legs. In this manner, the first and second track members 92, 93 cooperate in unison to provide the extension and lifting movement of the legrest platform 24.

[0084] The configuration of the mechanism 19 described above and shown in the figures provides several benefits and advantages over conventional linkages. For example, the telescoping action of the support track assembly 70 and the movement of the support track assembly 70 and seat bottom frame 18 along the rollers 48, 52 allow for further extension of the legrest platform 24 when the mechanism 19 is in the extended position while also allowing the mechanism 19 to be stowed into a more compact (i.e., "low-profile") area when the mechanism 19 is in the stowed position. This allows the furniture member 10 to provide as much or more comfort in the fully extended position as a conventional recliner, while also allowing the furniture member to have the same aesthetic appearance and design cues of popular stationary furniture.

[0085] That is, the configuration of the mechanism 19 allows for a variety of shapes and configurations of the base frame 12 that are not found in conventional motion furniture. For example, the base frame 12 can include a high-leg configuration (e.g., with legs 36 being 5.5 inches high in some embodiments) with no part of the mechanism 19 being visible when the mechanism 19 is in the stowed position, as shown in Figure 2a. Additionally, the furniture member 10 can have a low seat-frame-height (e.g., 11.5 inches from the floor to the top of the seat bottom frame 18 in the stowed position). This combination of high legs and low seat-frame-height leaves a very small area into which the entire mechanism 19 is packaged in the stowed position.

[0086] Furthermore, the particular furniture member 10 depicted in Figures 1-13 and 25-28, a depth (i.e., the direction extending between the front (forward) end and the back (aft) end of the furniture member) of the furniture member 10 is about 32 inches at a height where the legs 36 attach to the base

frame 12. This depth dimension only leaves about 30 inches of space for the mechanism 19 in the stowed position. The legrest platform 24 may be about 6 inches tall and may extend forward from the front end of the seat bottom frame 18 by about 19 inches in the fully extended position. To achieve the above large ranges of motion while maintaining the mechanism 19 hidden from view in the stowed position, the mechanism 19 is configured in a way that makes the mechanism 19 very low-profile and capable of a large amount of extension.

[0087] The long range of motion of the linkages 20 allow the seatback frame 16 and the legrest platform 24 to be in a "zero-gravity" position when the mechanism 19 is in the fully extended position. This "zero gravity" position may be particularly comfortable for many users, as the user's feet (resting on the fully extended legrest platform 24) will be positioned at or near the vertical level (i.e., the vertical distance off of the ground) of the user's heart. This "zero-gravity" positioning of the user's body in the furniture member 10 promotes restfulness and relaxation.

[0088] Furthermore, the construction of the mechanism 19 and the manners in which the seatback frame 16 and seat bottom frame 18 move relative to each other and relative to the base frame 12 allow for an effective "lengthening" of the seatback frame 16 as the mechanism 19 moves between the fully stowed and fully extended positions. That is, an effective length of the seatback or a distance L1 (Figures 1 and 2B) between an upper portion of the seatback frame 16 and a particular location on the seat bottom frame 18 will increase as the seatback frame 16 reclines and the mechanism 19 moves between the stowed and extended positions (see effective length or distance L2 in Figures 3 and 4). The seat bottom frame 18 travels forward relative to the base frame 12 by about seven inches as the mechanism 19 moves between the fully stowed and fully extended positions. This effective length change or separation between the seatback frame 16 and the seat bottom frame 18 allows the user's body to experience a larger amount of back recline than the actual angle change of the seatback frame 16 relative to the base frame 12 between the fully upright and reclined positions. As a non-limiting example, the distance L1 may be about 23.75 inches, and the distance L2 may be about 27 inches.

[0089] It will be appreciated that the mechanism 19 could be incorporated into a single-seat chair, a motion sofa, a motion loveseat or any style or type of furniture member. Furthermore, while the mechanism 19 is described above as being powered by the motor-driven actuator assembly 22, in some configurations, the linkages 20 could be manually powered.

[0090] With reference to Figures 14-20, a furniture member 210 is provided that may include a base frame 212, a seatback frame 216, a seat bottom frame 218, and a recliner and legrest mechanism 219. The mechanism 219 may include a pair of linkages 220 (only one of which is shown in the figures), and an actuator assembly 222 (Figures 19 and 20). The actuator assembly 222 and linkages 220 cooperate to move the seatback frame 216 and seat bottom frame 218 relative to each other and relative to the base frame 212, while simultaneously moving a legrest platform 224 (Figures 16 and 17) relative to the frames 212, 216, 218 between a stowed position (Figures 14-16) and an extended position (Figures 17-20). As will be described in more detail below, movement of the linkages 220 from the stowed position to the extended position also moves the seatback frame 216 from an upright position to a reclined position.

[0091] As shown in Figures 14-20, the base frame 212 may be a fixed construction including an aft support 228, a pair of side frames 230, a seat-support frame 234, and a plurality of legs 236. The seat-support frame 234 is disposed beneath and supports the seat bottom frame 218 and the linkages 220. As shown in Figure 19, the seat-support frame 234 may include a pair of fore/aft extending rails 238 and a cross rail 242. The fore/aft extending rails 238 are fixedly attached to the cross rail 242 and extend from the cross rail 242 to the aft support 228. The cross rails 242 extends between and is fixedly attached to the side frames 230. Each of the fore/aft extending rails 238 has a support member 244 and extending laterally outward therefrom. A first bracket 246 with a first roller 248 may be mounted on each of the support members 244 (see Figure 19)(only one of the first brackets 246 and one of the first rollers 248 are shown in the figures). A pair of second brackets 250 (only one shown in the figures) each having a third roller 252 may be mounted on the cross rail 242 (see Figure 20).

[0092] Each seatback frame 216 may support a seatback cushion 217 (Figures 14-17) and may include a pair of lateral support members 254 and a pair of cross members 256 extending between the support members 254 (Figure 19). Upper ends 257 of the lateral support members 254 may be pivotably attached to the base frame 212 via hinge brackets 259 (Figure 19). Because the seatback frame 216 pivots about an axis extending through the upper end of the seatback frame 16, there is no need for any special or additional clearance between the rearward-most part of the furniture member 210 (e.g., the aft support 228 of the base frame 212) and a wall (not shown) of a room (not shown) in which the furniture member 210 is situated. That is, the aft support 228 (and the rest of the base frame 212) remains stationary while the seatback frame 216 moves between the upright and reclined positions, and movement of the seatback frame 216 into the reclined position does not cause any portion of the furniture member 210 to move any further rearward than it was positioned in the upright position.

[0093] Each seat bottom frame 218 may support a seatback cushion 221 and may include a pair of lateral support members 258 and a pair of cross members 260 extending between the support members 258. Each of the lateral support members 258 of the seat bottom frame 218 may include a curved track 262 (Figures 19 and 20) that movably receive the second rollers 252 attached to the cross rail 242 of the base frame 212. As shown in Figures 16 and 17, the linkages 220 are coupled to the lateral support members 254, 258 of the seatback and seat bottom frames 216, 218 such that movement of the linkages 220 between the stowed position and the extended position causes corresponding movement of the seatback frame 216 and the seat bottom frame 218 relative to the base frame 212 and relative movement between the seatback frame 216 and the seat bottom frame 218, as will be described in more detail below. The curved tracks 262 of the seat bottom frame 218 move relative to the second rollers 252 as the linkages 220 move between the stowed and extended positions so that the base frame 212 can movably support the seat bottom frame 218.

[0094] Each linkage 220 may include a recliner linkage 264 (Figures 16 and 17), a swing linkage 266 (Figures 21-24), an extension link 268 (Figures 21-24), a curved support track 270 (Figures 21-24), and a pantograph linkage 271 (Figures 21-24). The recliner linkages 264 are connected to the seatback frame 216 and causes the seatback frame 216 to recline (i.e., pivot about hinge brackets 259) as the mechanism 219 moves between the stowed and extended positions. Each recliner linkage 264 may include a first mounting link 272, a first connecting link 274 and a second connecting link 276 (Figures 18 and 19). The first mounting link 272 may be fixedly attached to a corresponding one of the lateral support members 254 of the seatback frame 216, as shown in Figures 18 and 19. Opposite ends of the first connecting link 274 may be rotatably coupled to the first mounting link 272 and the second connecting link 276, respectively. The second connecting link 276 may also be fixedly attached to the lateral support member 258 of the seat bottom frame 218 (as shown in Figure 19) such that movement of the seat bottom frame 218 causes corresponding movement of the recliner linkage 264 to move the seatback frame 216 between an upright position (Figure 16) and a reclined position (Figure 17).

[0095] As shown in Figures 21-24, the swing linkage 266 may include a second mounting link 278, a first swing link 280 and a second swing link 282. The second mounting link 278 may be fixedly attached to a corresponding one of the side frames 230 of the base frame 212, as shown in Figure 19. As shown in Figures 21-24, the first swing link 280 may include first and second legs 284, 286 cooperating to form a generally L-shaped member. A distal end of the first leg 284 may be rotatably connected to the second mounting link 278. The second swing link 282 may be a generally triangular shaped member and may be connected at a first corner to an intermediate portion of the first swing link 280 (i.e., at or near an intersection of the first and second legs 284, 286). A second corner of the second swing link 282 may be rotatably connected to a throw link 292 that is also rotatably connected to the support track 270. A third corner of the second swing link 282 may be connected to a distal end of the second leg 286 of the first swing link 280 by a spring 287 or other resiliently stretchable member. The first corner of the second swing link 282 and/or the intermediate

portion of the first swing link 280 may be rotatably coupled to a first intermediate link 288. The first intermediate link 288 may be attached to and support the seat bottom frame 18. A central portion of the second swing link 82 may be rotatably coupled to the extension link 268.

[0096] The support track 270 may be a curved member having a channel 294 that movably receives the first roller 248 (attached to the base frame 212) and a second roller 249 (attached to the seat bottom frame 218), as shown in Figure 20. In this manner, the rollers 248, 249 movably support the linkages 220 and the seat bottom frame 218.

[0097] As shown in Figures 21-24, the pantograph linkage 271 may include first and second throw links 296, 298, first, second and third intermediate links 300, 302, 304, a connecting link 306, and first and second support links 308, 310. The first throw link 296 may be rotatably coupled to the support track 270, the extension link 268 and the first and second intermediate links 300, 302. The second throw link 298 may be rotatably coupled to the support track 270, the second intermediate link 302 and the third intermediate link 304. The first, second and third intermediate links 300, 302, 304 may be rotatably coupled to the second support link 310. The first support link 308 may be rotatably coupled to the second support link 310 and the connecting link 306. The first support link 308 may be attached to and support the legrest platform 224, as shown in Figure 17. The second support link 310 may be attached to and support an intermediate legrest platform 225, as shown in Figure 17.

[0098] As shown in Figures 19 and 20, the actuator assembly 222 may include a motor 312, a guide member 314 and a slide member 316. The guide member 314 may be rotatably coupled to the aft support 228 of the base frame 212 by bracket 318. The slide member 316 may be slidable along the guide member 314 and may be rotatably coupled to the seat bottom frame 218 by brackets 320. Operation of the motor 312 in a first direction may cause the slide member 316 to move along the guide member 314 away from the motor 312, which causes the seat bottom frame 218 and the linkages 220 to move toward the extended position, which in turn, causes the seatback frame 216 to simultaneously move toward a reclined position. Operation of the motor 312 in a

second direction may cause the slide member 316 to move along the guide member 314 toward the motor 312, which causes the seat bottom frame 218 and the linkages 220 to move toward the stowed position, which in turn, causes the seatback frame 216 to simultaneously move toward an upright position. Because the linkages 220 are able to simultaneously move the legrest platform 224, the seat bottom frame 218, and the seatback frame 216, the mechanism 219 only needs to incorporate a single motor (rather than one motor for legrest extension and another for seatback reclining). Therefore, a two-button controller can be implemented to control the motor 312 (e.g., one button for moving the mechanism 219 toward the extended position, and another button for moving the mechanism 219 toward the stowed position).

[0099] The configuration of the mechanism 219 described above and shown in the figures provides several benefits and advantages over conventional linkages. For example, the support track 270 and the movement of the support track 270 and seat bottom frame 218 along the rollers 248, 252 allow for further extension of the legrest platform 224 when the mechanism 219 is in the extended position while also allowing the mechanism 219 to be stowed into a more compact (i.e., "low-profile") area when the mechanism 219 is in the stowed position. This allows the furniture member 210 to provide as much or more comfort in the fully extended position as a conventional recliner, while also allowing the furniture member to have the same aesthetic appear and design cues of popular stationary furniture.

[0100] That is, the configuration of the mechanism 219 allows for a variety of shapes and configurations of the base frame 212 that are not found in conventional motion furniture. For example, the base frame 212 can include a high-leg configuration (e.g., with legs 236 being six inches high in some embodiments) with little or none of the mechanism 219 being visible when the mechanism 219 is in the stowed position, as shown in Figure 15. Additionally, the furniture member 210 can have a low seat-frame-height (e.g., 11.5 inches from the floor to the top of the seat bottom frame 218 in the stowed position). This combination of high legs and low seat-frame-height leaves a very small area into which the entire mechanism 219 is packaged in the stowed position.

[0101] The additional range of motion of the linkages 220 allow the seatback frame 216 and the legrest platform 224 to be in a "zero-gravity" position when the mechanism 219 is in the fully extended position. This "zero gravity" position may be particularly comfortable for many users, as the user's feet (resting on the fully extended legrest platform 224) will be positioned at or near the vertical level (i.e., the vertical distance off of the ground) of the user's heart. This "zero-gravity" positioning of the user's body in the furniture member 210 promotes restfulness and relaxation.

[0102] It will be appreciated that the mechanism 219 could be incorporated into a single-seat chair, a motion sofa, a motion loveseat or any style or type of furniture member. Furthermore, while the mechanism 219 is described above as being powered by the motor-driven actuator assembly 222, in some configurations, the linkages 220 could be manually powered.

[0103] Referring now to Figures 25-28, the furniture member 10 is depicted with an upholstery 500 system covering the base frame 12, seatback frames 16 and seat bottom frames 18. The seatback frames 16 of both seat assemblies 14 can be covered by a single, unitary seatback cushion 502. Seatback upholstery 504 may be wrapped taut around at a least a portion of the seatback cushion 502. Each seat bottom frame 16 may be covered by individual seat bottom cushions 506 that are each wrapped in respective upholstery layers 508. In some configurations, the seat bottom cushions 502 may have heights (thicknesses) of about eight inches. As shown in Figures 25-28, each entire seat bottom cushion and upholstery 506, 508 is movable relative to the entire other seat bottom cushion and upholstery 506, 508 and relative to the seatback cushion and upholstery 502, 504 as the seatback frame 16 reclines and the mechanism 19 moves toward the extended position.

[0104] As shown in Figures 26-28, first and second lower portions 510, 511 of the seatback cushion and upholstery 502, 504 are independently movable relative to each other and relative to middle and upper portions 512, 514 of the seatback cushion and upholstery 502, 504 as the seatback frames 16 reclines and the mechanisms 19 move toward the extended position. As shown in Figures 27 and 28, one of the first and second lower portions 510, 511 can pivot

forward in response to forward rotation of a lower end of the seatback frame 16 as the seatback frame 16 moves toward the reclined position.

[0105] As shown in Figures 26 and 28, a gap 516 is formed between an aft end 518 of the seat bottom cushion and upholstery 506, 508 and the lower portion 511 when the seatback frame 16 is in the reclined position and the mechanism 19 is in the extended position. This is due to the effective length change of the seatback frame 16 described above (i.e., L2>L1). The gap 516 may be entirely closed (i.e., the aft end 518 is in contact with the lower portion 511) when the seatback frame 16 is in the upright position and the mechanism 19 is in the stowed position.

[0106] As shown in Figure 26, each seat assembly 14 may include an upholstery layer or sheet 520 that may at least partially cover the linkages 20 when the mechanism 19 is in the extended position. A cross member 522 (Figures 3 and 4) may be attached to each seat bottom frame 18 and may support the corresponding upholstery sheet 520 when the mechanism 19 is in the extended position. The upholstery sheet 520 may be folded underneath the seat bottom frame 18 when the mechanism 19 is in the stowed position.

[0107] The structure and function of the upholstery system 500 described above allows the furniture member 10 to provide as much or more comfort in the fully extended and reclined position as a conventional recliner, while also allowing the furniture member 10 to have the same aesthetic appearance and design cues of popular stationary furniture. While the upholstery system 500 is described as being incorporated into the furniture member 10 with the mechanisms 19 described above, it will be appreciated that the upholstery system 500 could be incorporated into other furniture items having different recliner and legrest mechanisms.

[0108] The foregoing description of the embodiments has been provided for purposes of illustration and description. It is not intended to be exhaustive or to limit the disclosure. Individual elements or features of a particular embodiment are generally not limited to that particular embodiment, but, where applicable, are interchangeable and can be used in a selected embodiment, even if not specifically shown or described. The same may also be varied in many ways.

Such variations are not to be regarded as a departure from the disclosure, and all such modifications are intended to be included within the scope of the disclosure.

CLAIMS

What is claimed is:

1. A furniture member comprising:

a stationary base frame;

a seatback frame supported by the base frame and pivotable relative to the base frame about an axis extending through an upper portion of the seatback frame;

a seat bottom frame supported by the base frame and movable relative to the seatback frame and the base frame; and

a linkage attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform, the linkage being movable between a first position and a second position, wherein movement of the linkage toward the first position causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position, wherein movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position.

2. The furniture member of Claim 1, wherein the base frame hides the entire linkage from view when the linkage is in the first position.

3. The furniture member of Claim 1, wherein the linkage is powered by a single motor movable in a first direction to move the seatback from the fully upright position to the fully reclined position while simultaneously moving the legrest platform from the stowed position to the fully extended position, and wherein the single motor is movable in a second direction to move the seatback from the fully reclined position to the fully upright position while simultaneously moving the legrest platform from the fully extended position to the stowed position.

4. The furniture member of Claim 3, wherein the motor moves a slide member linearly along a guide member, the slide member is rotatably attached

to the seat bottom frame, and the guide member is rotatably attached to the base frame.

5. The furniture member of Claim 1, wherein the linkage includes a track assembly including a first member and a second member that is translatable along a length of the first member, and wherein the second member is rotatably coupled with a platform bracket supporting the legrest platform.

6. The furniture member of Claim 5, wherein the linkage includes a throw arm that is coupled to the first member for rotation relative to the first member and translation with the first member relative to the second member.

7. The furniture member of Claim 6, wherein the throw arm is rotatably coupled to an extension link that is rotatably coupled to the platform bracket.

8. The furniture member of Claim 7, wherein the base frame includes a first roller that is received in a curved track of the first member.

9. The furniture member of Claim 8, wherein the base frame includes a second roller that is received in another track fixedly attached to the seat bottom frame.

10. The furniture member of Claim 9, wherein the throw arm is rotatably coupled to first, second and third links at three different locations along a length of the throw arm.

11. The furniture member of Claim 10, wherein rotation of the throw arm determines timing of movement of the seatback frame, the seat bottom frame and the legrest platform relative to the base frame.

12. The furniture member of Claim 1, wherein the base frame is configured for a single seat assembly.

13. The furniture member of Claim 1, wherein the base frame is configured for a plurality of seat assemblies.

14. A furniture member comprising:

a stationary base frame;

a seatback frame supported by the base frame and pivotable relative to the base frame;

a seat bottom frame supported by the base frame and movable relative to the seatback frame and the base frame; and

a linkage attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform, the linkage being movable between a first position and a second position, wherein movement of the linkage toward the first position causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position, wherein movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position, wherein the base frame hides the entire linkage from view when the linkage is in the first position.

15. The furniture member of Claim 14, wherein the linkage includes a track assembly including a first member and a second member that is translatable along a length of the first member, and wherein the second member is rotatably coupled with a platform bracket supporting the legrest platform.

16. The furniture member of Claim 15, wherein the linkage includes a throw arm that is coupled to the first member for rotation relative to the first member and translation with the first member relative to the second member.

17. The furniture member of Claim 16, wherein the throw arm is rotatably coupled to an extension link that is rotatably coupled to the platform bracket.

18. The furniture member of Claim 17, wherein the base frame includes a first roller that is received in a curved track of the first member.

19. The furniture member of Claim 18, wherein the base frame includes a second roller that is received in another track fixedly attached to the seat bottom frame.

20. The furniture member of Claim 19, wherein the throw arm is rotatably coupled to first, second and third links at three different locations along a length of the throw arm.

21. The furniture member of Claim 20, wherein the seatback frame is pivotable relative to the base frame about an axis extending through an upper portion of the seatback frame.

22. The furniture member of Claim 21, wherein the linkage is powered by a single motor movable in a first direction to move the seatback from the fully upright position to the fully reclined position while simultaneously moving the legrest platform from the stowed position to the fully extended position, and wherein the single motor is movable in a second direction to move the seatback from the fully reclined position to the fully upright position while simultaneously moving the legrest platform from the fully extended position to the stowed position.

23. The furniture member of Claim 22, wherein the motor moves a slide member linearly along a guide member, the slide member is rotatably attached to the seat bottom frame, and the guide member is rotatably attached to the base frame.

24. The furniture member of Claim 14, wherein the linkage is packaged within a space having a depth dimension of about 28 to 32 inches when the linkage is in the fully stowed position and is configured to extend the legrest platform to about 18 to 20 inches in front of the seat bottom frame in the fully extended position, wherein the depth dimension extends parallel to a floor upon which the furniture member is situated between fore and aft ends of the furniture member.

25. The furniture member of Claim 24, wherein the base frame includes legs that are about five to six inches tall, and wherein the linkage is disposed entirely above top ends of the legs in the fully stowed position.

26. The furniture member of Claim 25, wherein a vertical distance between the floor and a top of the seat bottom frame is about 11 to 12 inches in the fully stowed position.

27. The furniture member of Claim 26, wherein the seat bottom frame travels forward relative to the base frame by about six to eight inches.

28. The furniture member of Claim 27, wherein the seat bottom frame separates from the seatback frame as the linkage moves from the fully stowed position to the fully extended position.

29. A furniture member comprising:

a stationary base frame;

a seatback frame supported by the base frame and pivotable relative to the base frame;

a seat bottom frame supported by the base frame and movable relative to the seatback frame and the base frame; and

a linkage attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform, the linkage being movable between a first position and a second position, wherein movement of the linkage toward the first position

causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position, wherein movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position,

the linkage including a first curved track and a second curved track, the first curved track movably receives a first roller attached to the base frame and a second roller attached to the seat bottom frame, the second curved track receives a third roller attached to the first curved track to allow for relative telescoping movement between the first and second curved tracks, the second curved track rotatably supporting the legrest platform.

30. The furniture member of Claim 29, wherein the seat bottom frame includes a third curved track member fixedly attached thereto, the third curved track member receiving a fourth roller attached to the base frame.

31. The furniture member of Claim 30, wherein the second curved track is shaped to provide a downward dipping movement of the legrest platform during initial movement of the linkage from the first position to the second position, and wherein the second curved track is shaped to subsequently extend and lift the legrest platform in response to continued movement of the linkage toward the second position.

32. The furniture member of Claim 31, wherein the linkage includes a throw arm that is coupled to the first curved track member for rotation relative to the first curved track member and translation with the first curved track member relative to the second curved track member.

33. The furniture member of Claim 32, wherein the throw arm is rotatably coupled to an extension link that is rotatably coupled to the platform bracket.

34. The furniture member of Claim 33, wherein the linkage includes first, second and third links that are rotatably coupled to the throw arm at three different locations along a length of the throw arm.

35. The furniture member of Claim 34, wherein the seatback frame is pivotable relative to the base frame about an axis extending through an upper portion of the seatback frame.

36. The furniture member of Claim 35, wherein the base frame hides the entire linkage from view when the linkage is in the first position.

37. The furniture member of Claim 29, wherein the second curved track includes a curved portion and an angled end portion.

38. A furniture member comprising:

a stationary base frame;

a seatback frame supported by the base frame and pivotable relative to the base frame;

a seat bottom frame supported by the base frame and movable relative to the seatback frame and the base frame; and

a linkage attached to the base frame, the seatback frame, the seat bottom frame and a legrest platform, the linkage being movable between a first position and a second position, wherein movement of the linkage toward the first position causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position, wherein movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position,

the linkage including a curved track member and a pantograph linkage, the curved track member movably receiving a first roller attached to the base frame and a second roller attached to the seat bottom frame, the pantograph

linkage is movably supported by the curved track member and movably supports the legrest platform.

39. The furniture member of Claim 38, wherein movement of the curved track member relative to the base frame moves the legrest platform relative to the base frame.

40. The furniture member of Claim 39, wherein movement of the pantograph linkage relative to the curved track member extends and lifts the legrest platform relative to the base frame.

41. The furniture member of Claim 40, wherein the seatback frame is pivotable relative to the base frame about an axis extending through an upper portion of the seatback frame.

42. A furniture member comprising:

a stationary base frame;

first and second seatback frames supported by the base frame and pivotable relative to each other and the base frame about an axis extending through upper portions of the first and second seatback frames, the first and second seatback frames being pivotable between upright and reclined positions;

first and second seat bottom frames supported by the base frame and movable relative to the first and second seatback frames and the base frame; and

an upholstery system including a unitary seatback upholstery sheet covering the first and second seatback frames, a first seat bottom upholstery sheet covering the first seat bottom frame, and a second seat bottom upholstery sheet covering the second seat bottom frame, the seatback upholstery sheet including an upper portion, a first lower portion corresponding to the first seatback frame, and a second lower portion corresponding to the second seatback frame, the first and second lower portions being independently movable relative to the upper portion.

43. The furniture member of Claim 42, wherein the first and second lower portions of the seatback upholstery sheet are separated from the first and second seat bottom upholstery sheets when the first and second seatback frames are in the reclined position.

44. The furniture member of Claim 43, wherein the first and second lower portions of the seatback upholstery sheet are in contact with the first and second seat bottom upholstery sheets, respectively, when the first and second seatback frames are in the upright position.

45. The furniture member of Claim 44, wherein a linkage attached to the base frame, one of the first and second seatback frames, one of the first and second seat bottom frames, and a legrest platform, the linkage being movable between a first position and a second position, wherein movement of the linkage toward the first position causes the seatback frame to move toward a fully upright position and simultaneously causes the legrest platform to move toward a stowed position, wherein movement of the linkage toward the second position causes the seatback frame to move toward a fully reclined position and simultaneously causes the legrest platform to move toward a fully extended position.

46. The furniture member of Claim 45, wherein the linkage includes a first curved track and a second curved track, the first curved track movably receives a first roller attached to the base frame and a second roller attached to the seat bottom frame, the second curved track receives a third roller attached to the first curved track to allow for relative telescoping movement between the first and second curved tracks, the second curved track rotatably supporting the legrest platform.

47. The furniture member of Claim 46, wherein the seat bottom frame includes a third curved track member fixedly attached thereto, the third curved track member receiving a fourth roller attached to the base frame.

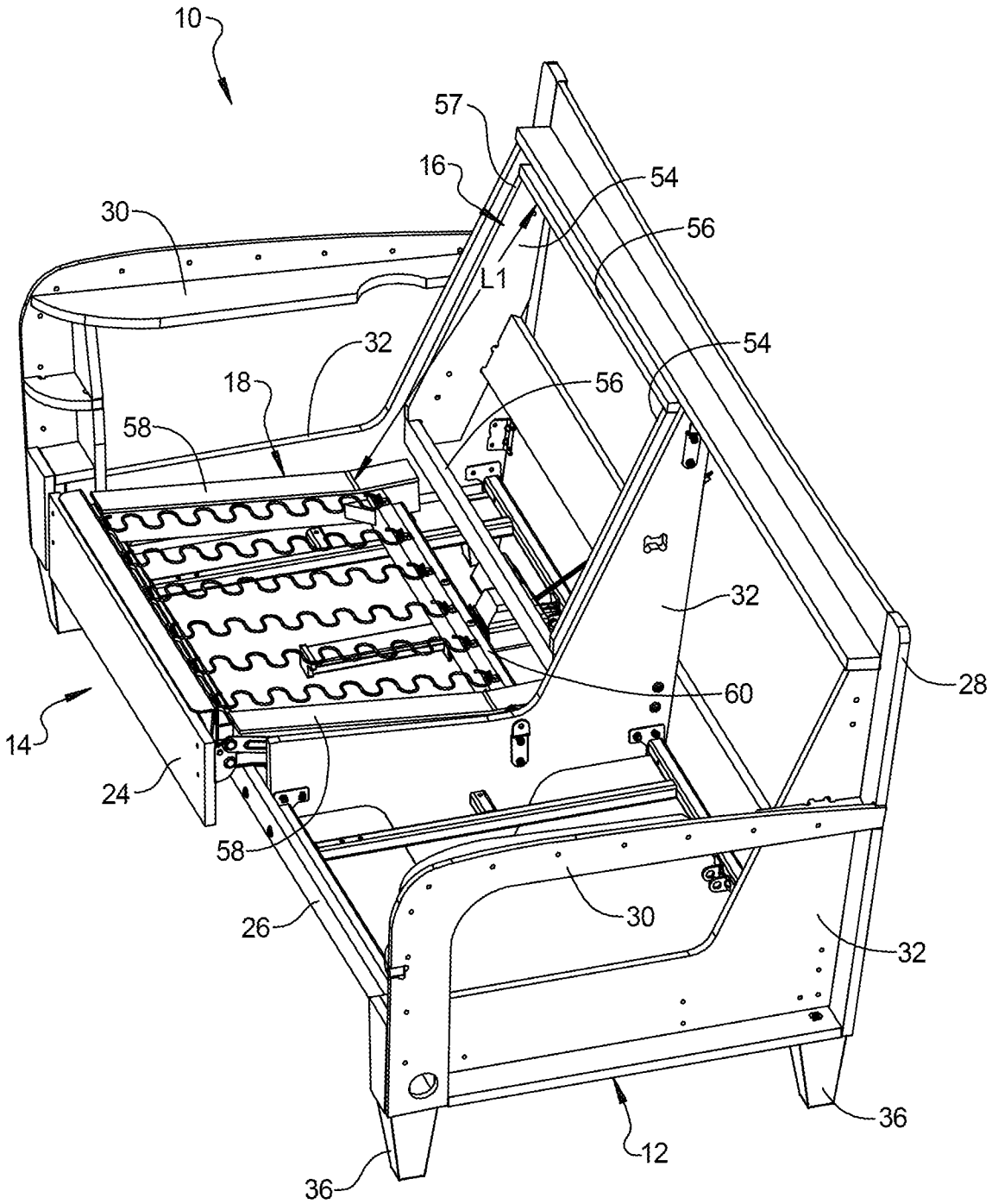

FIG 1

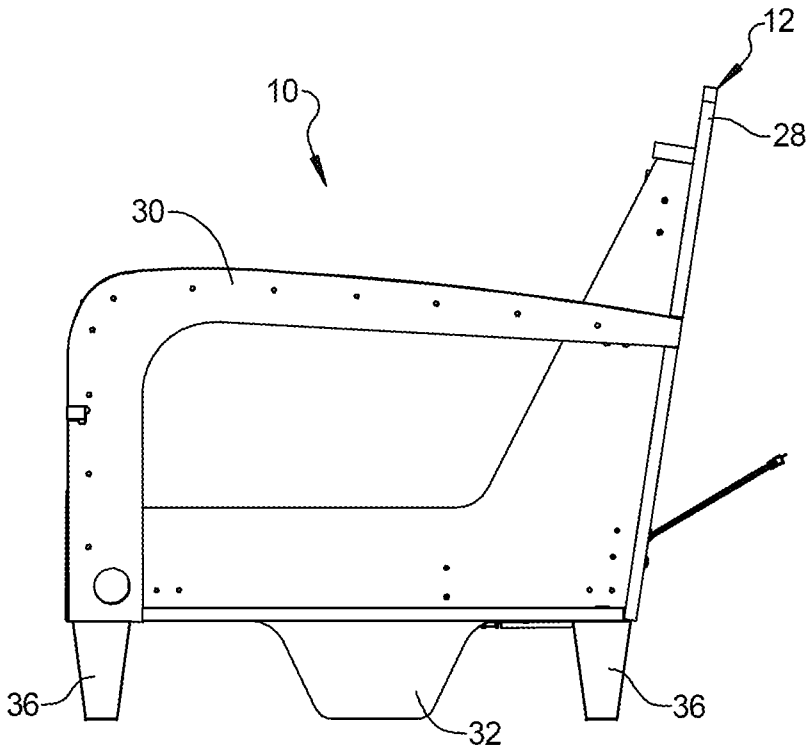

FIG 2A

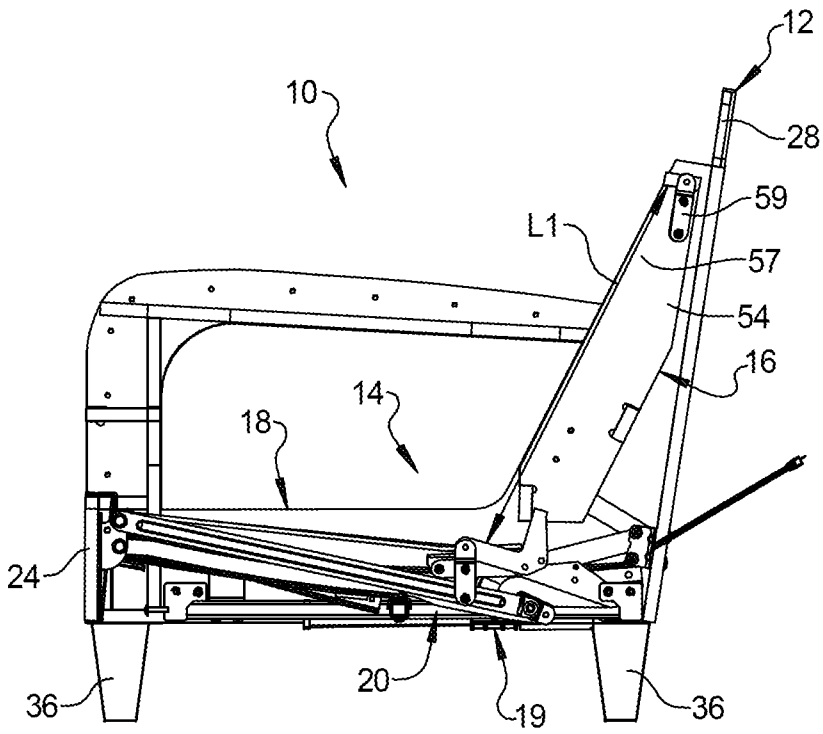

FIG 2B

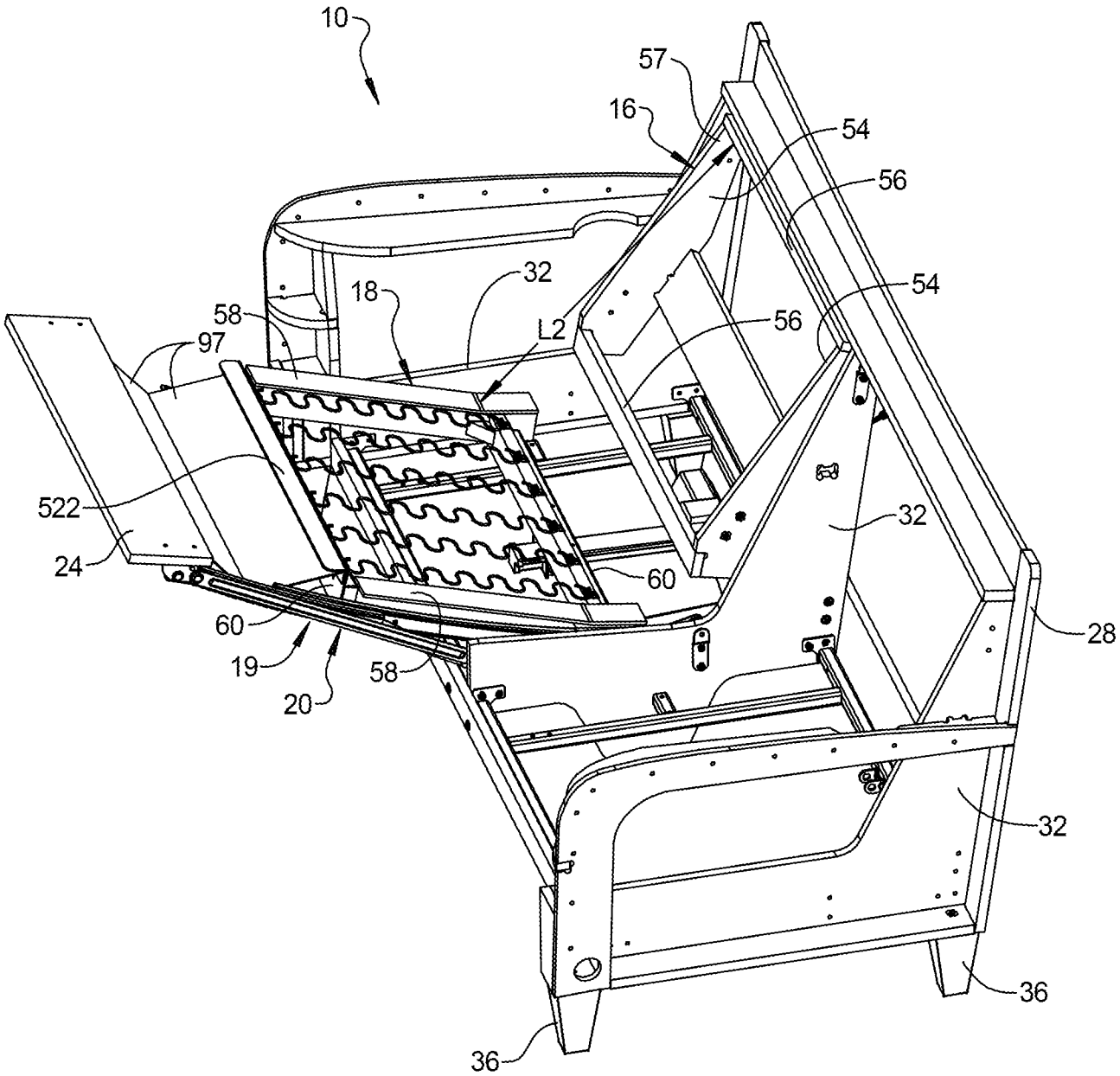

FIG 3

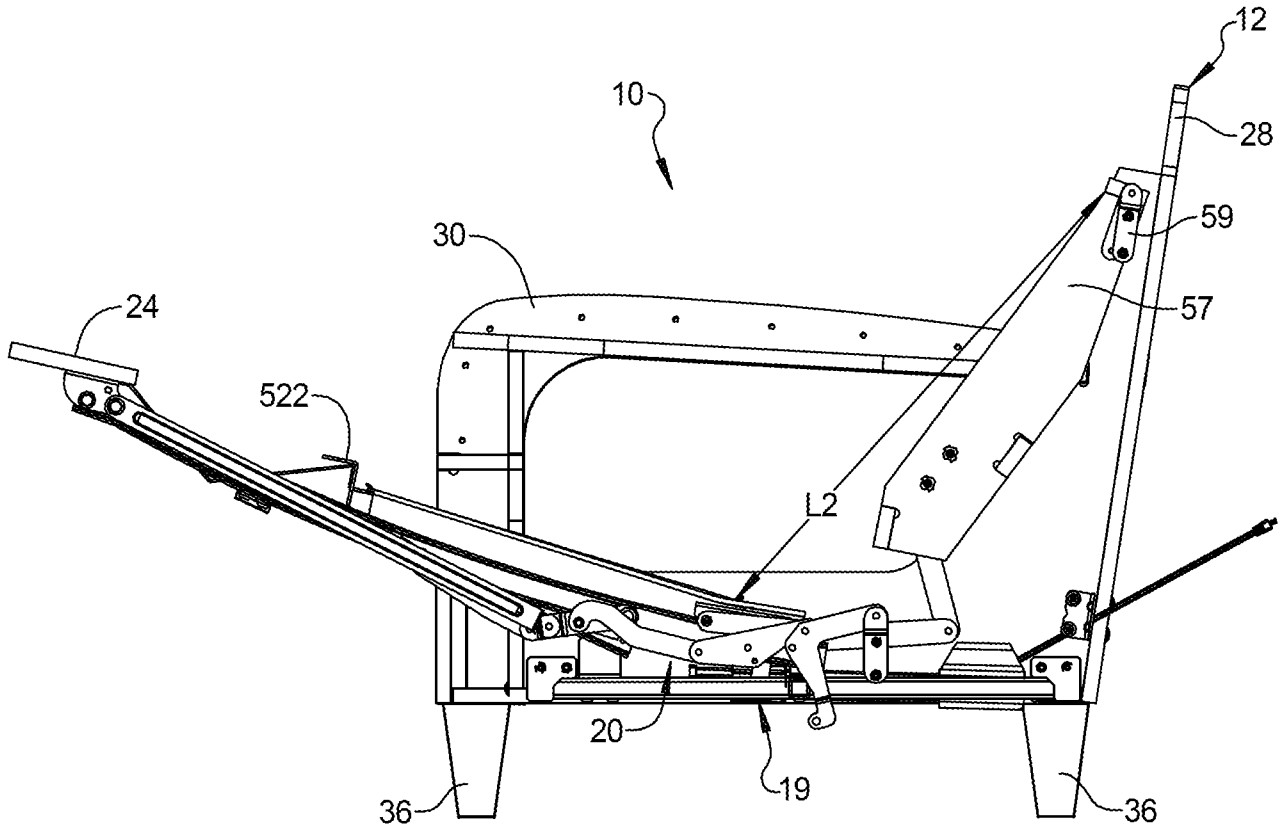

FIG 4

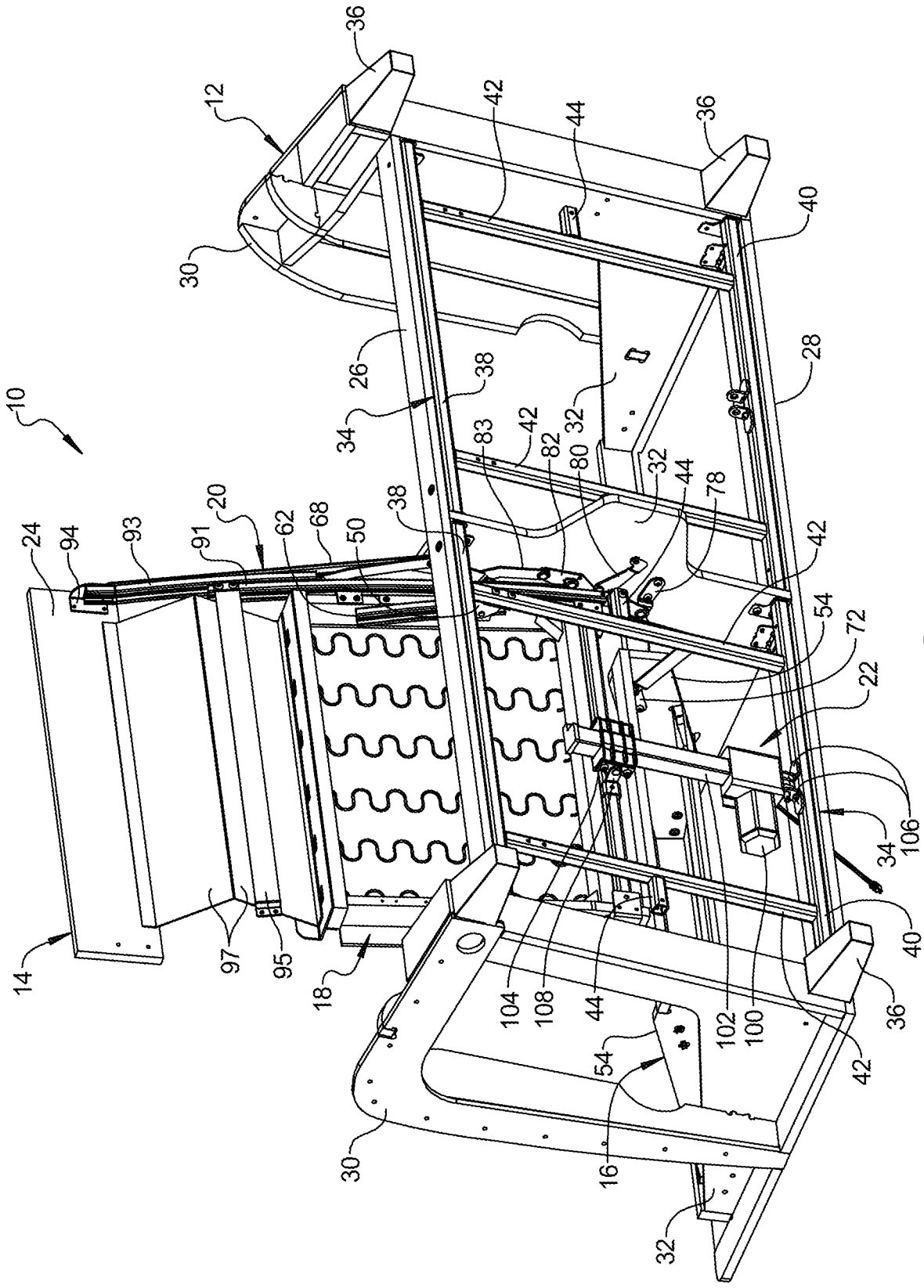
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
50
54
62
68
72
78
80
82
83
91
93
94
95
97
100
102
104
106
108

FIG 5

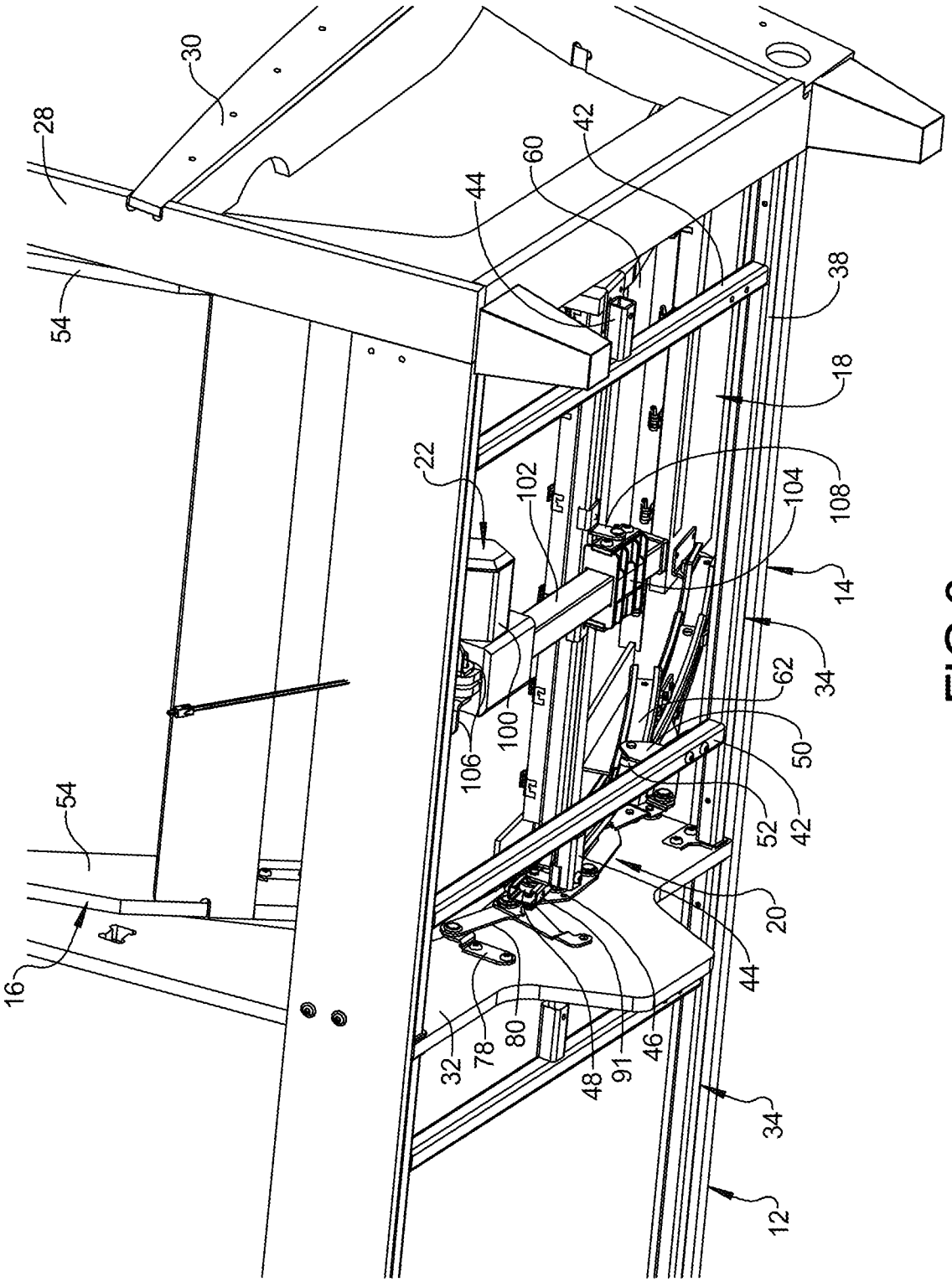
30
28
42
60
44
54
38
18
22
102
108
104
14
34
62
100
106
50
52
42
54
20
44
16
78
80
32
46
91
48
34
12

FIG 6

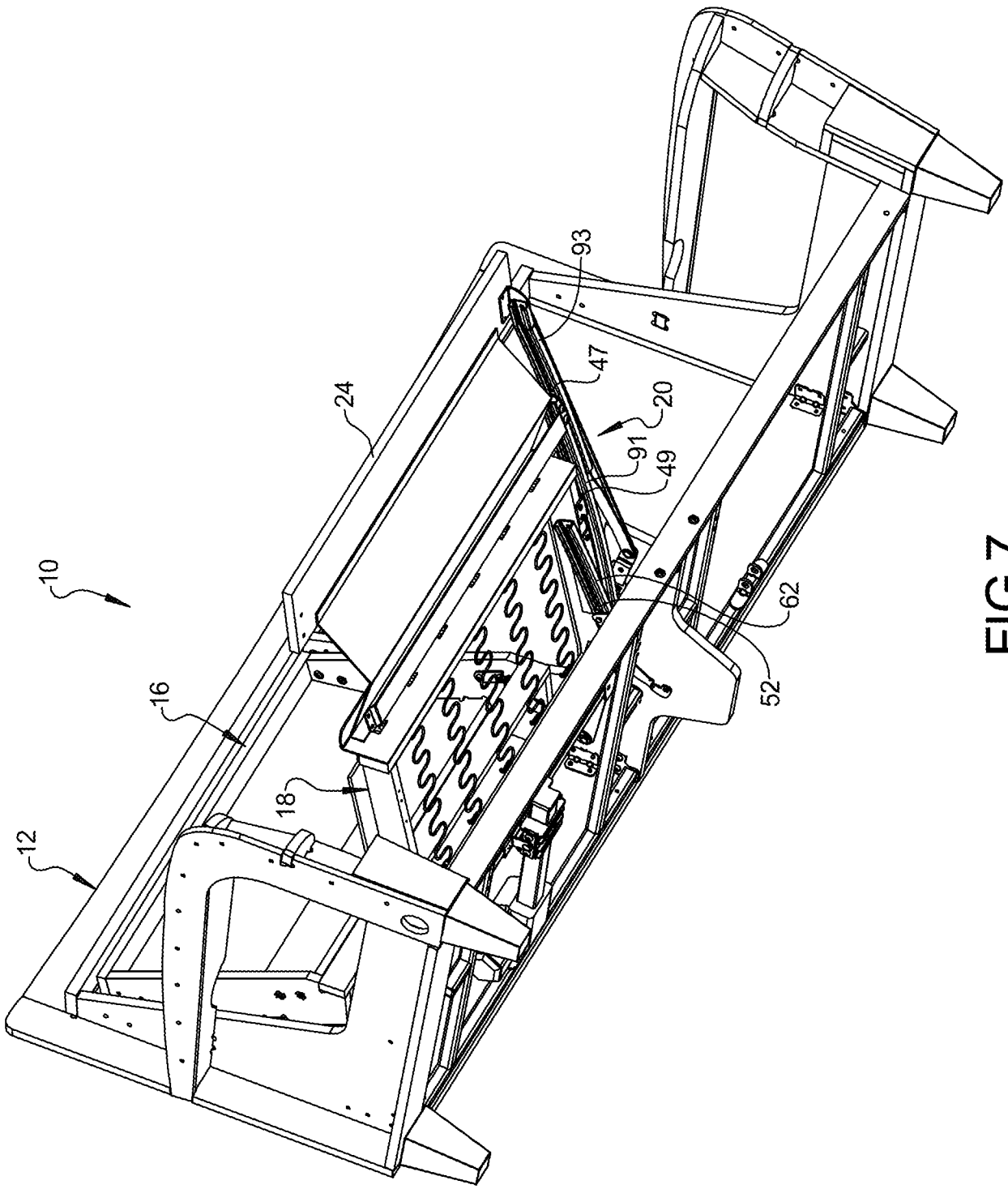

FIG 7

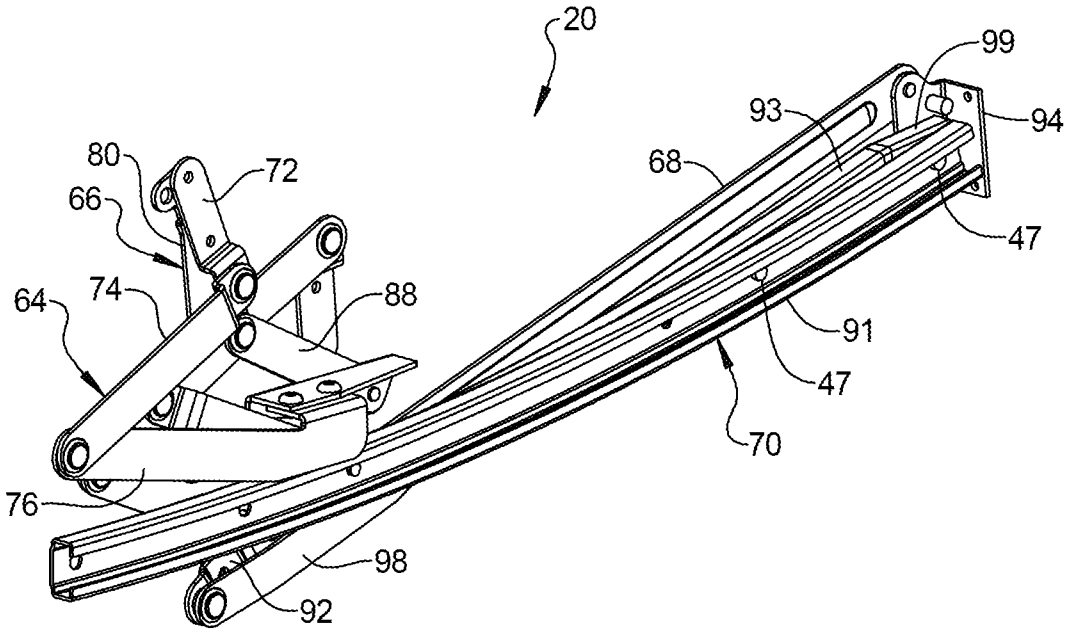
20
99
93
94
80
72
68
66
47
64
74
88
91
47
70
76
98
92

FIG 8

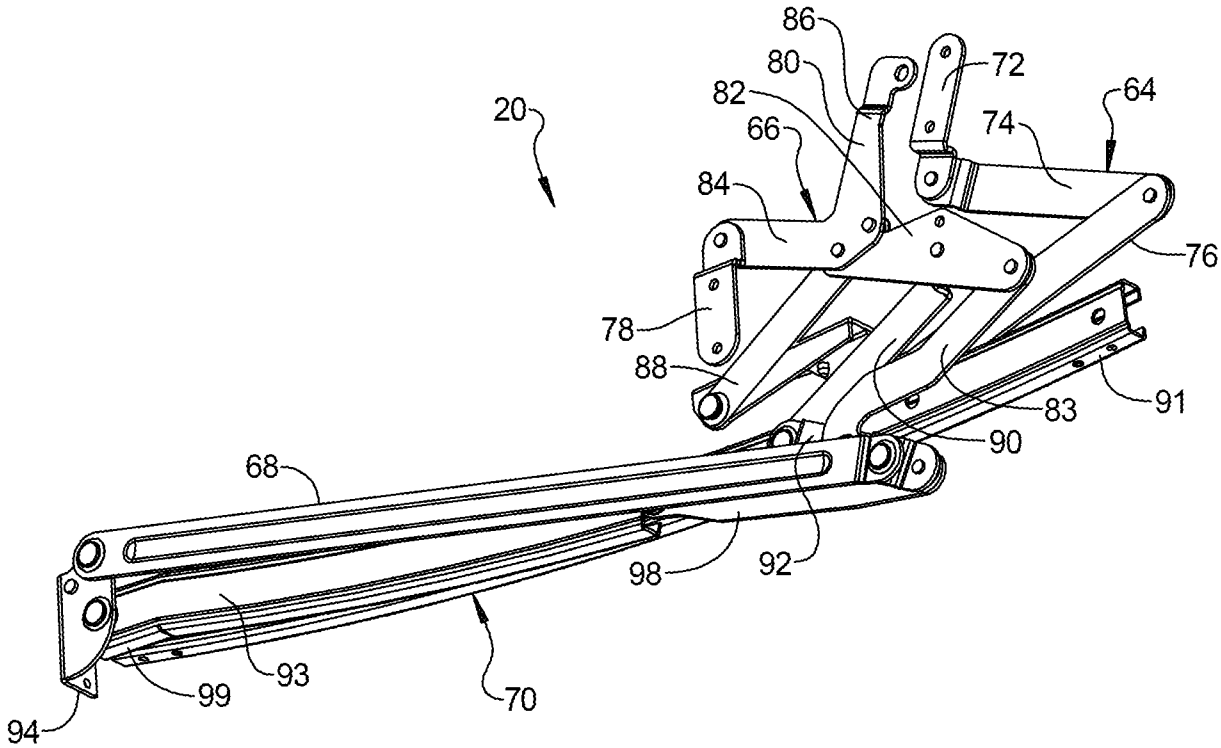
86
80
72
64
82
20
66
74
84
76
78
88
91
83
90
68
98
92
93
99
70
94

FIG 9

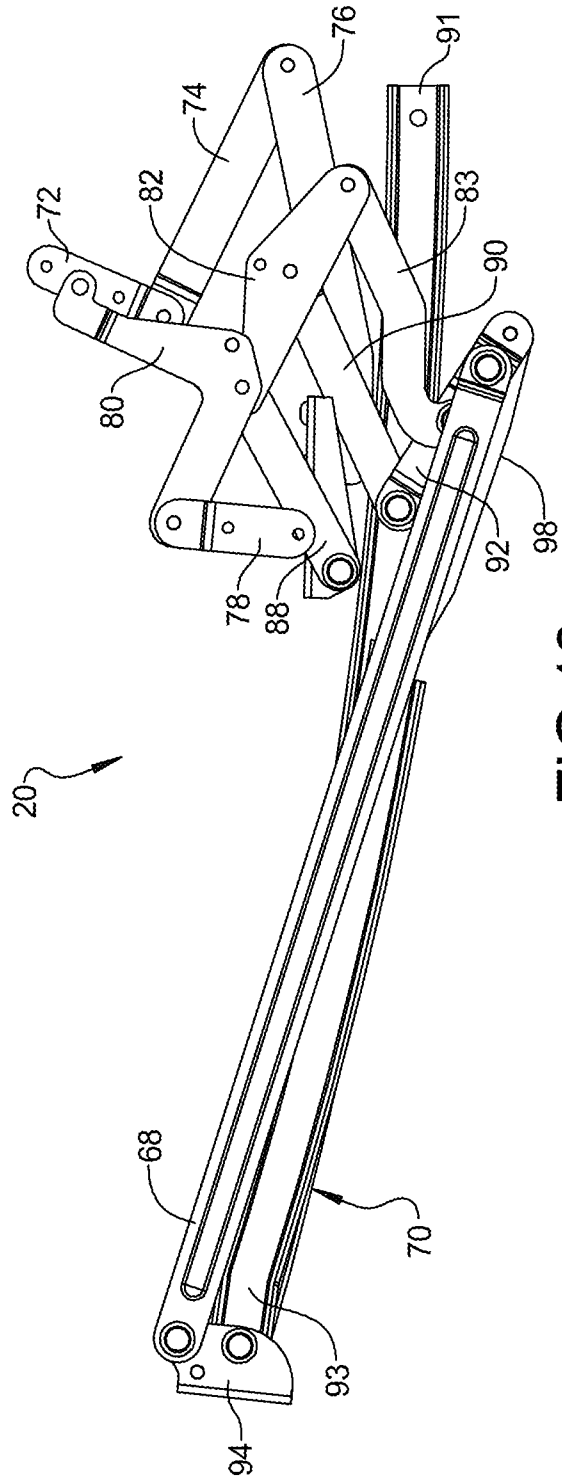
20
68
70
93
94
72
82
74
76
91
83
90
80
92
98
78
88

FIG 10

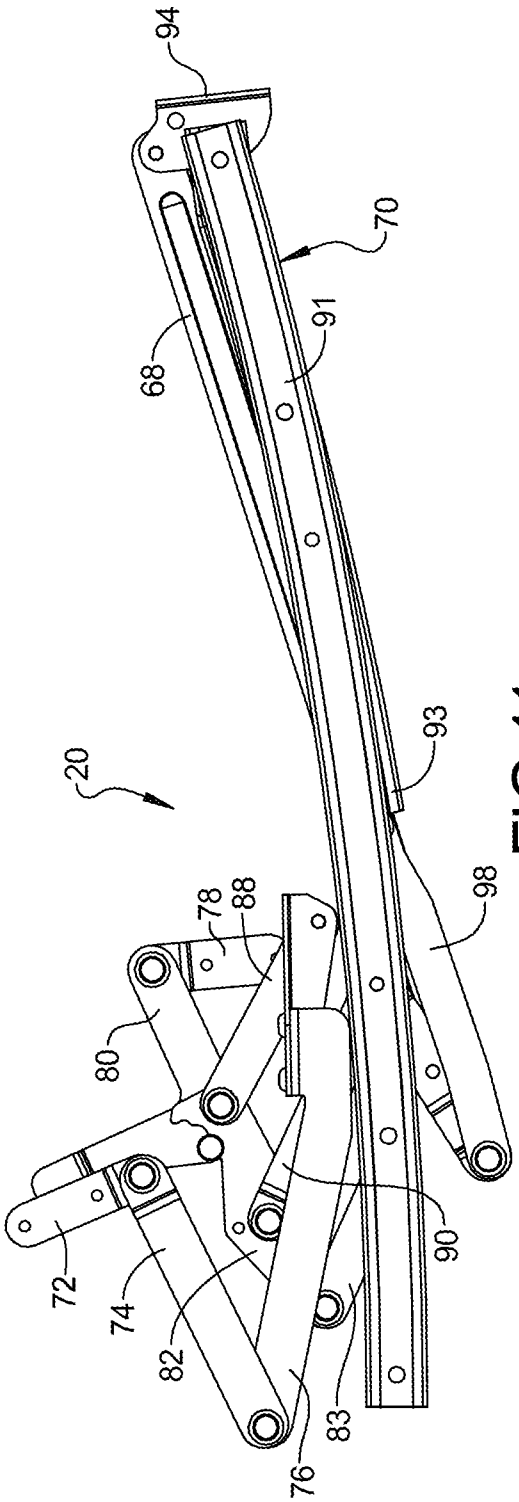
20
94
70
68
91
93
98
78
88
80
90
72
74
82
76
83

FIG 11

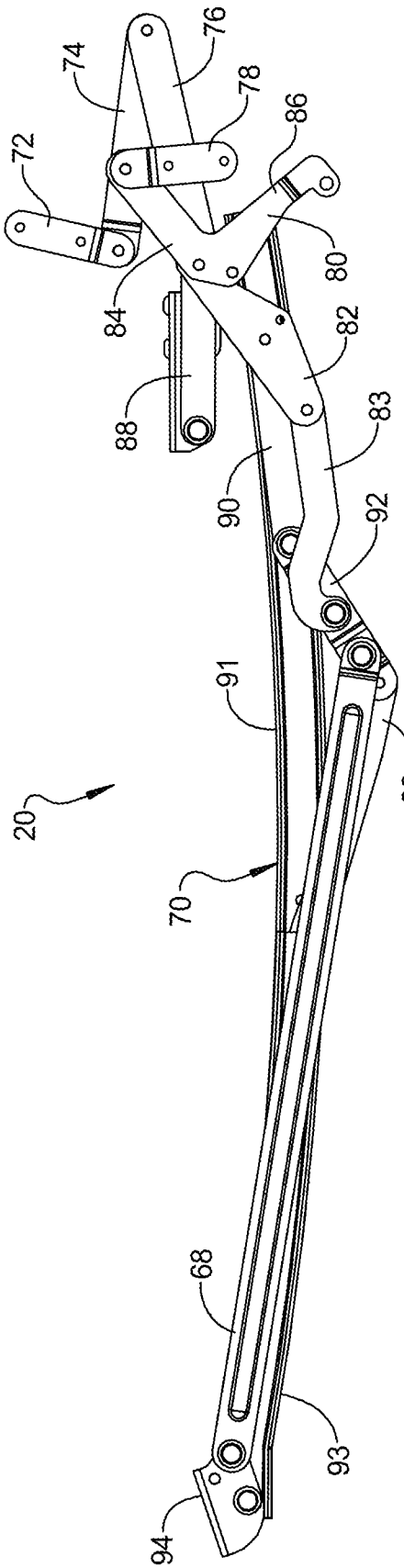
74
76
78
72
86
80
84
82
88
83
90
92
91
98
20
70
68
93
94

FIG 12

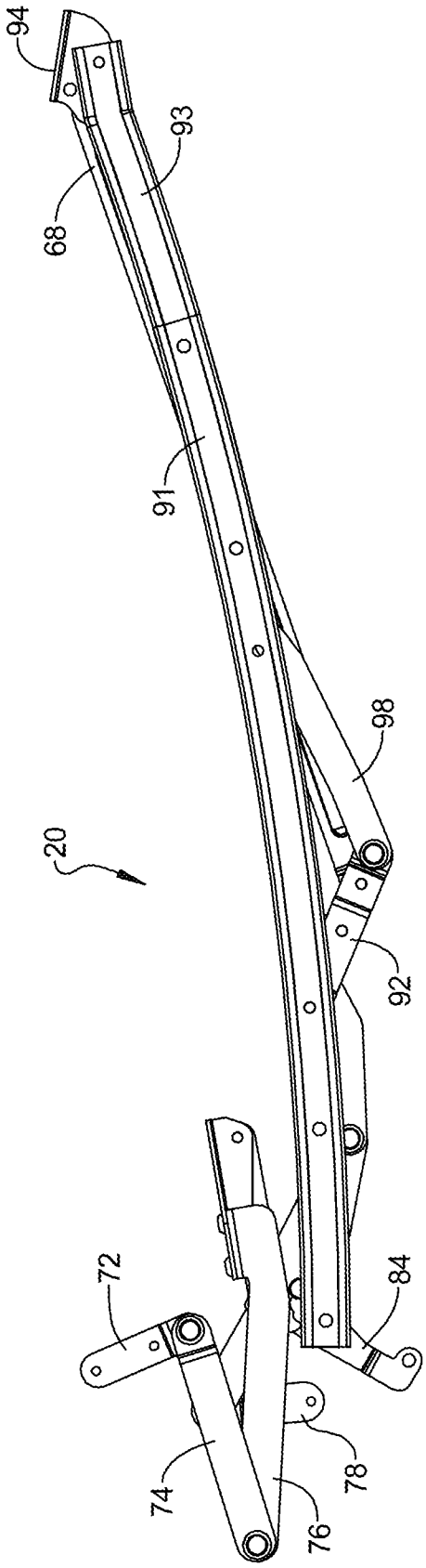
94
93
68
91
98
20
92
72
84
74
78
76

FIG 13

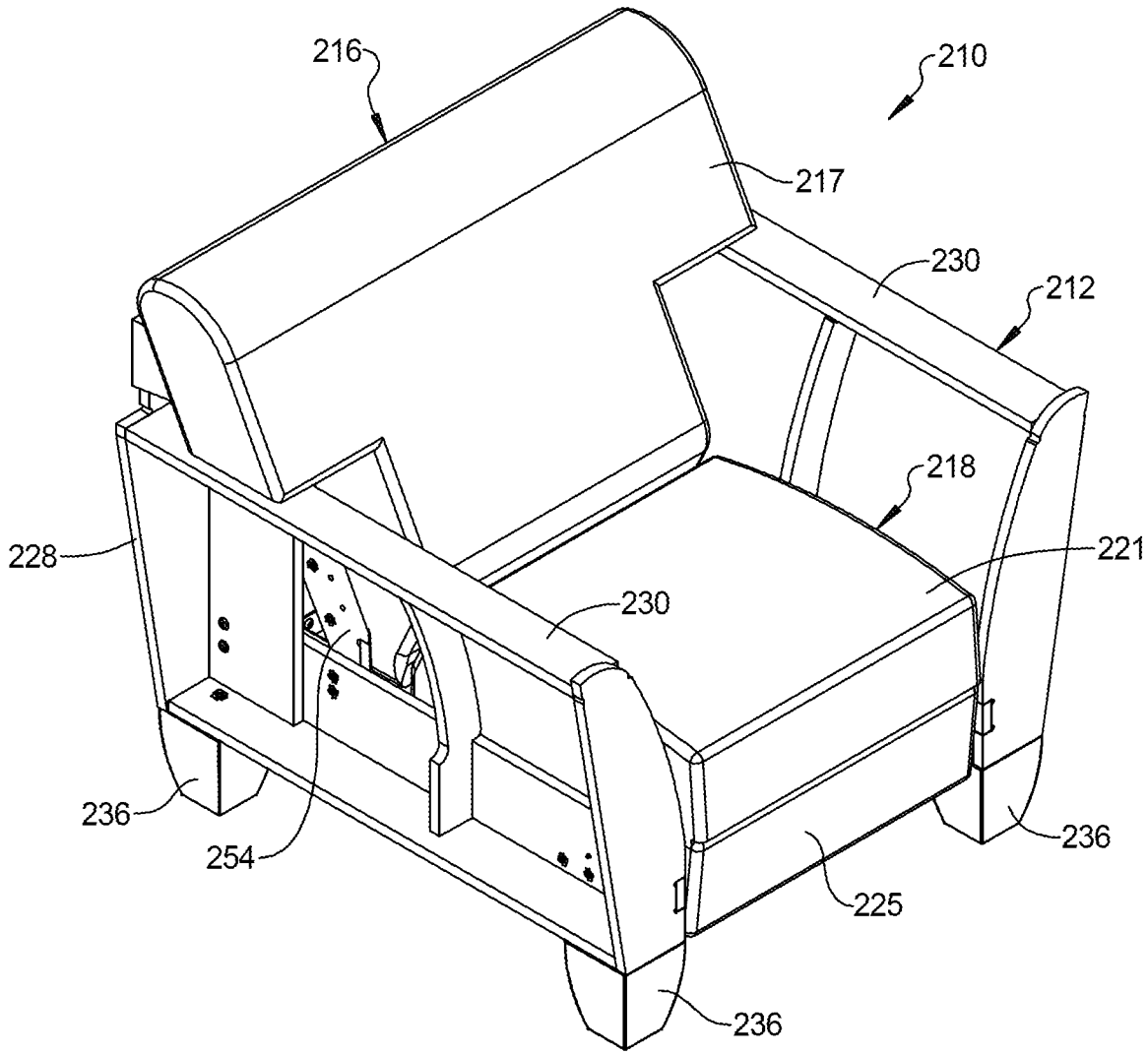

FIG 14

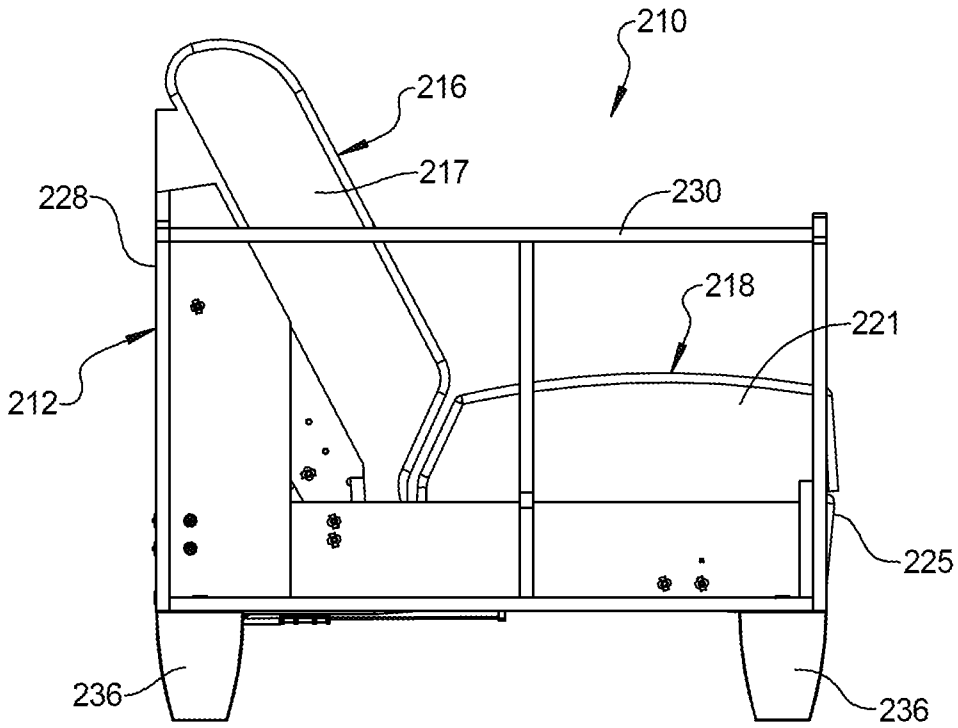
210
216
217
228
230
218
221
212
225
236
236

FIG 15

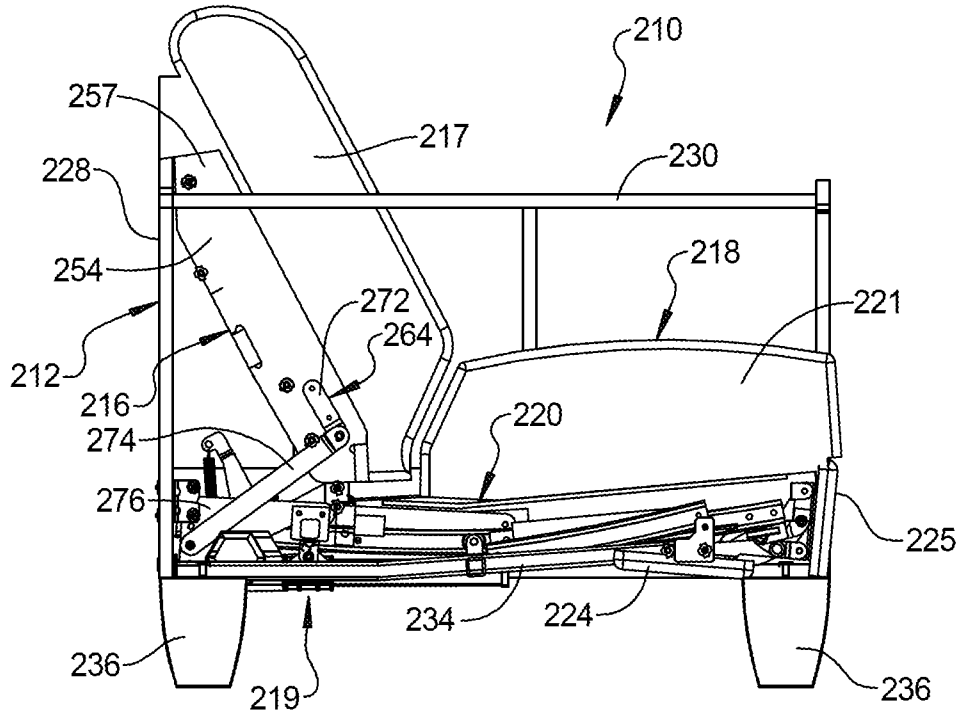
210
257
217
228
230
254
218
221
272
264
212
216
220
274
276
225
234
224
236
219
236

FIG 16

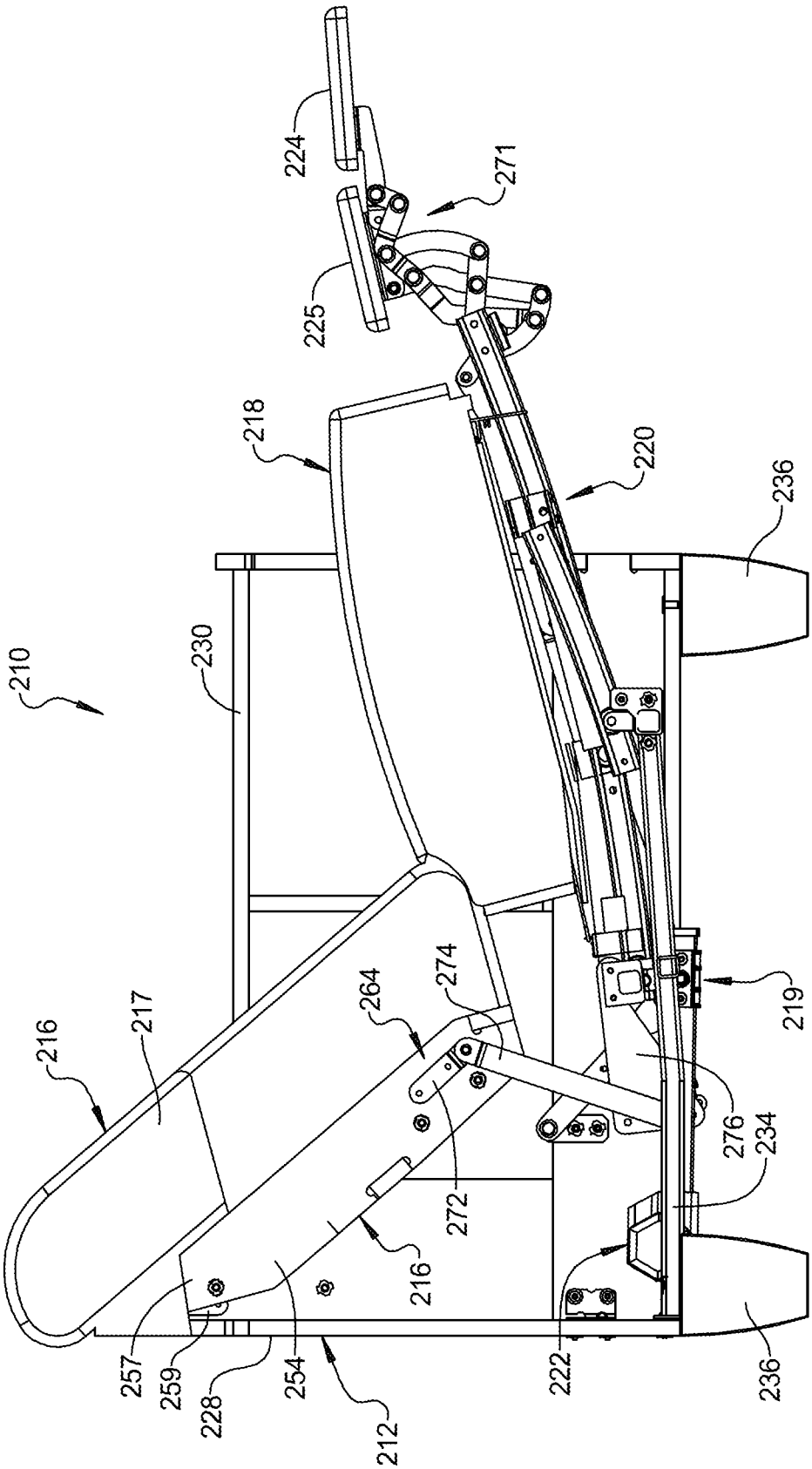
224
271
225
218
220
236
210
230
216
217
264
274
219
276
234
272
216
257
259
228
254
212
222
236

FIG 17

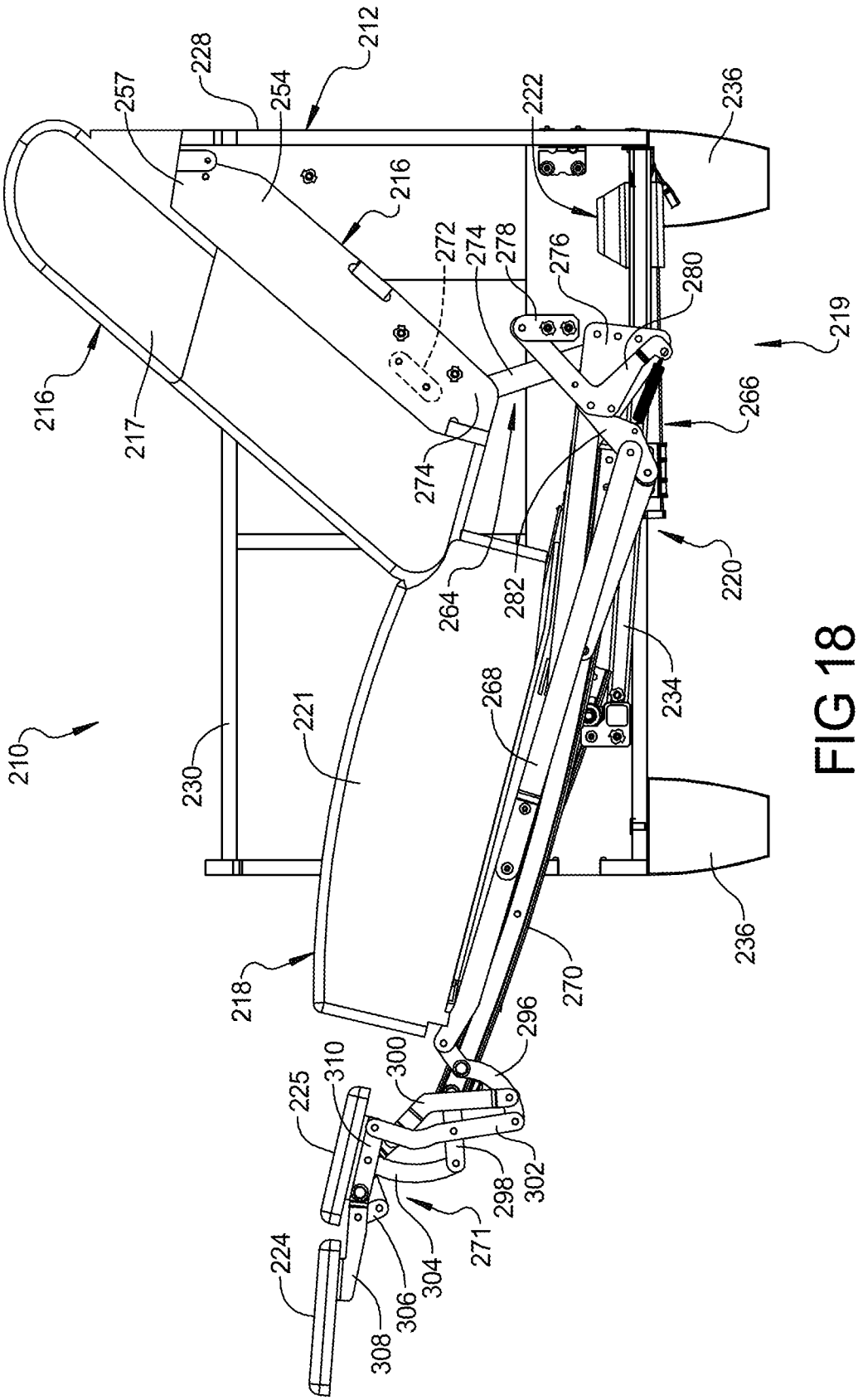
212
228
257
254
222
236
216
272
274
278
276
280
219
216
217
266
274
264
282
220
234
210
221
268
230
236
218
270
296
300
310
225
298
302
271
224
304
306
308

FIG 18

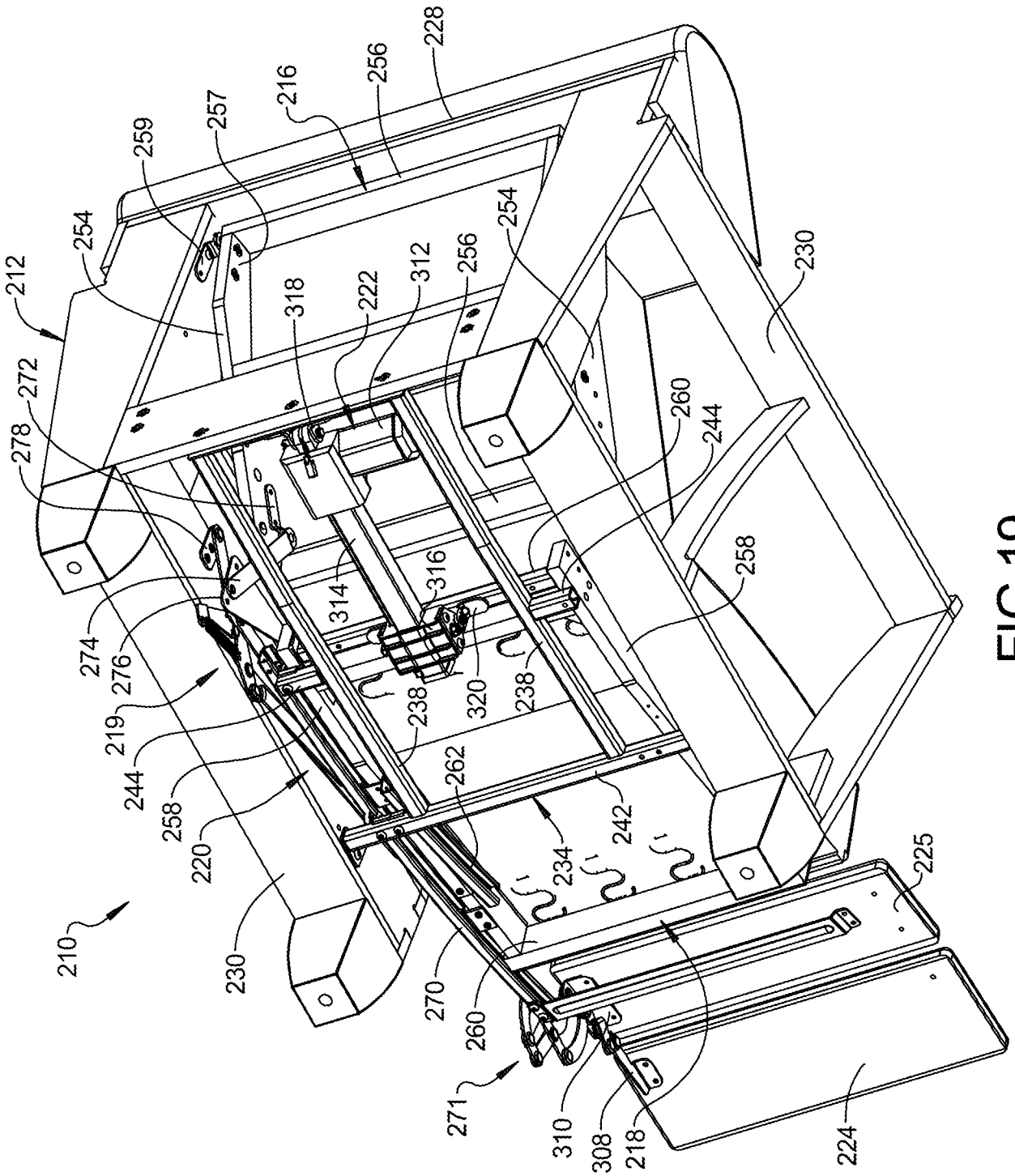
228
216
256
257
259
254
212
272
278
318
222
312
256
254
230
260
244
258
274
276
219
244
258
220
230
210
314
316
238
320
238
262
242
234
225
270
260
271
310
308
218
224

FIG 19

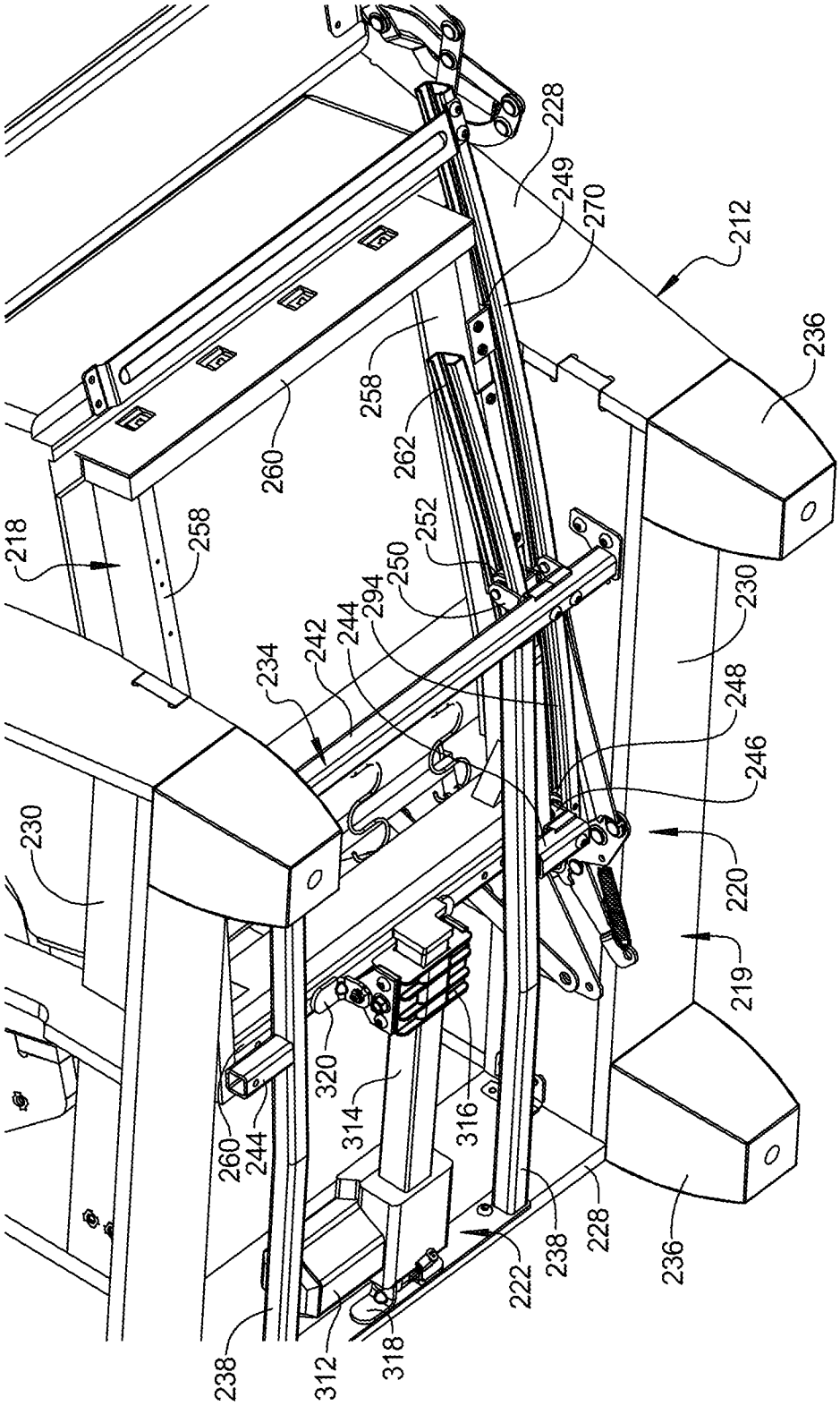
228
249
270
212
236
258
262
260
252
250
294
244
242
234
218
258
230
248
246
220
219
230
320
314
316
260
244
238
312
318
222
238
228
236

FIG 20

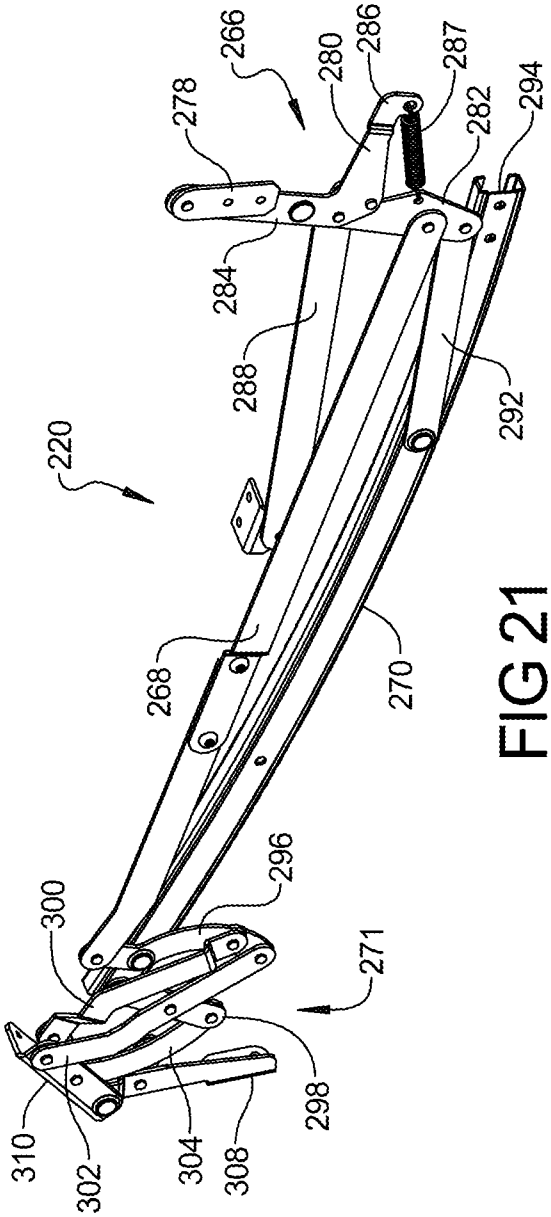
266
278
280
286
287
282
294
284
288
292
220
268
270
296
300
271
310
302
304
308
298

FIG 21

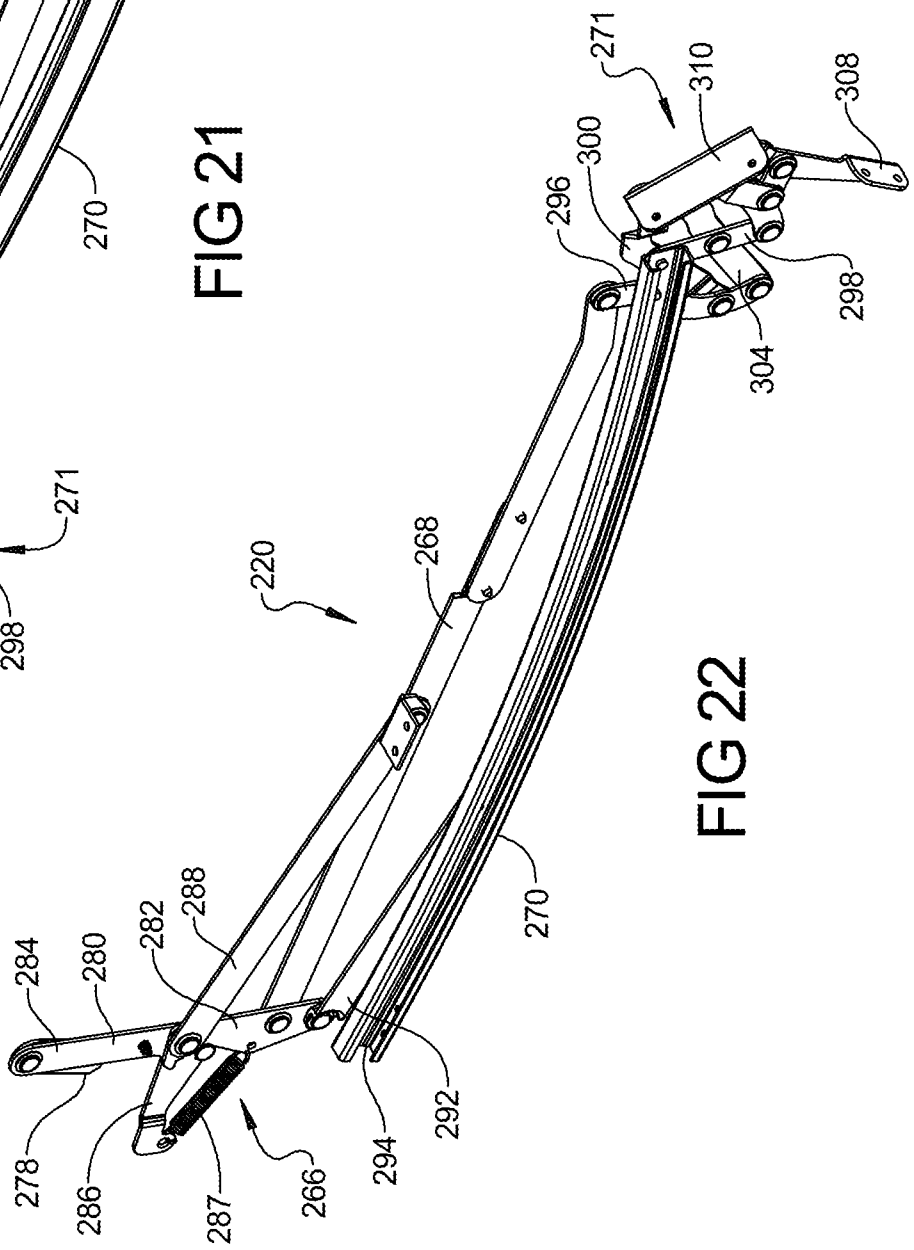
271
310
308
300
296
298
304
220
268
270
284
280
282
288
278
286
287
266
294
292

FIG 22

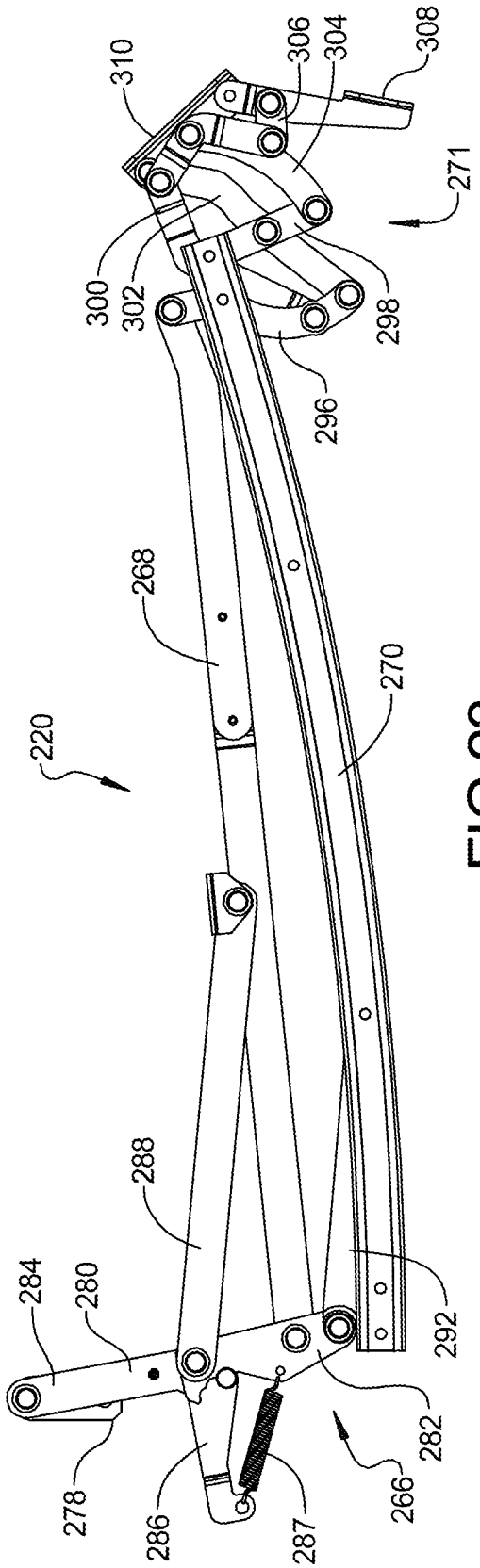
310
306
304
308
271
300
302
298
296
268
270
220
288
284
280
292
282
278
286
287
266

FIG 23

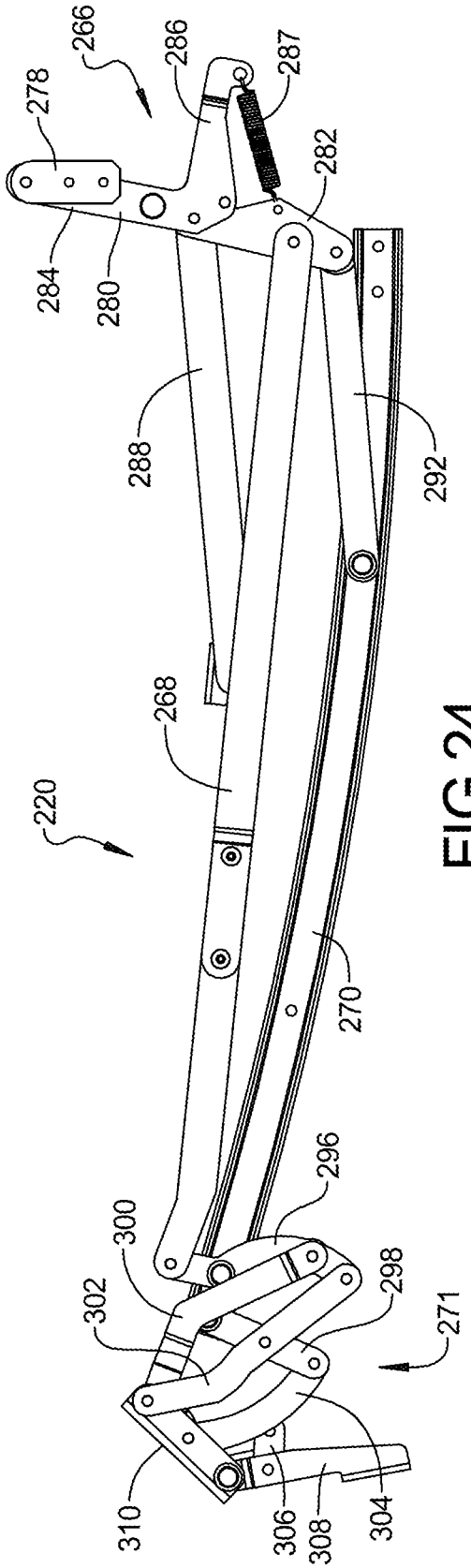
266
286
287
278
282
284
280
288
292
268
220
270
296
300
302
298
271
310
306
308
304

FIG 24

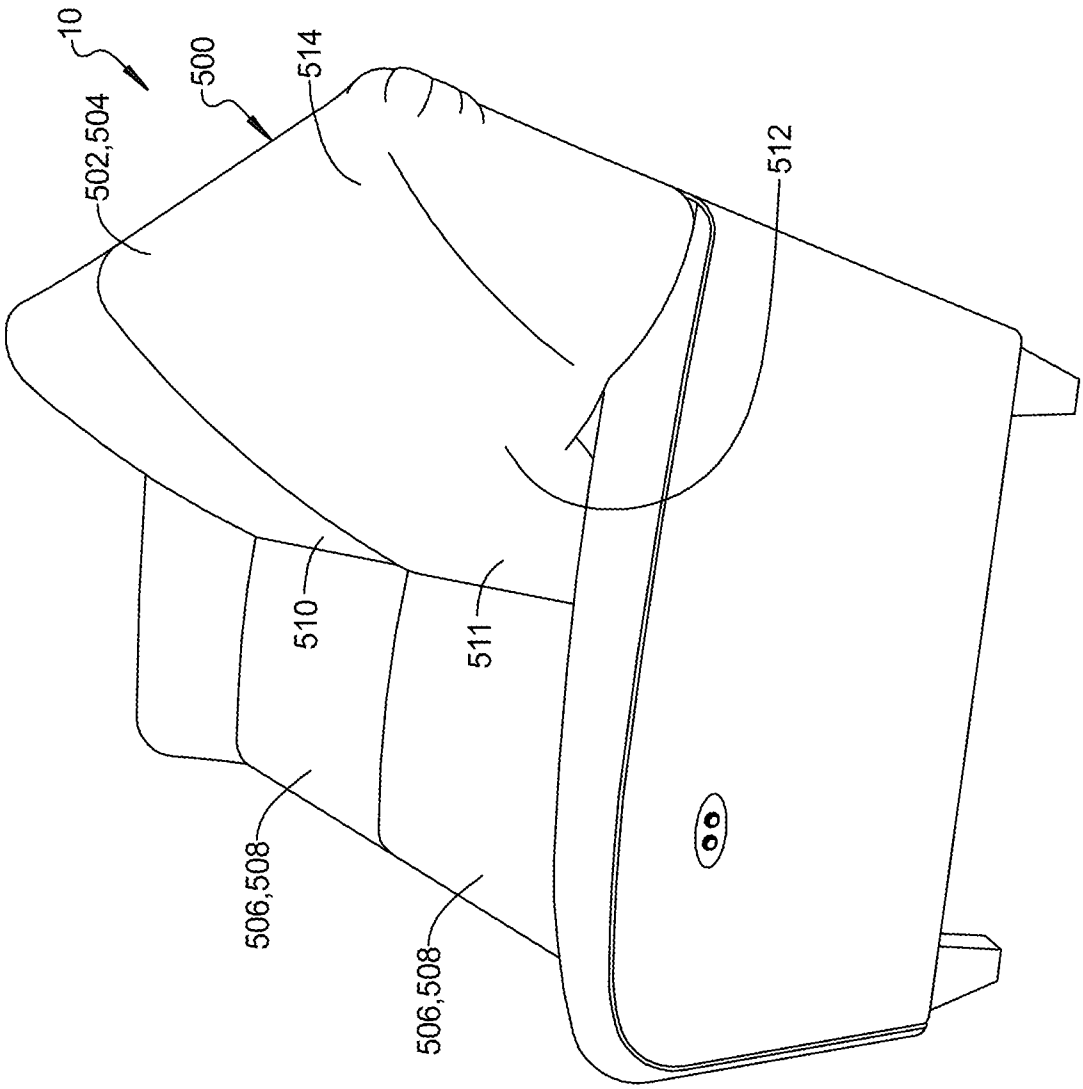

FIG 25

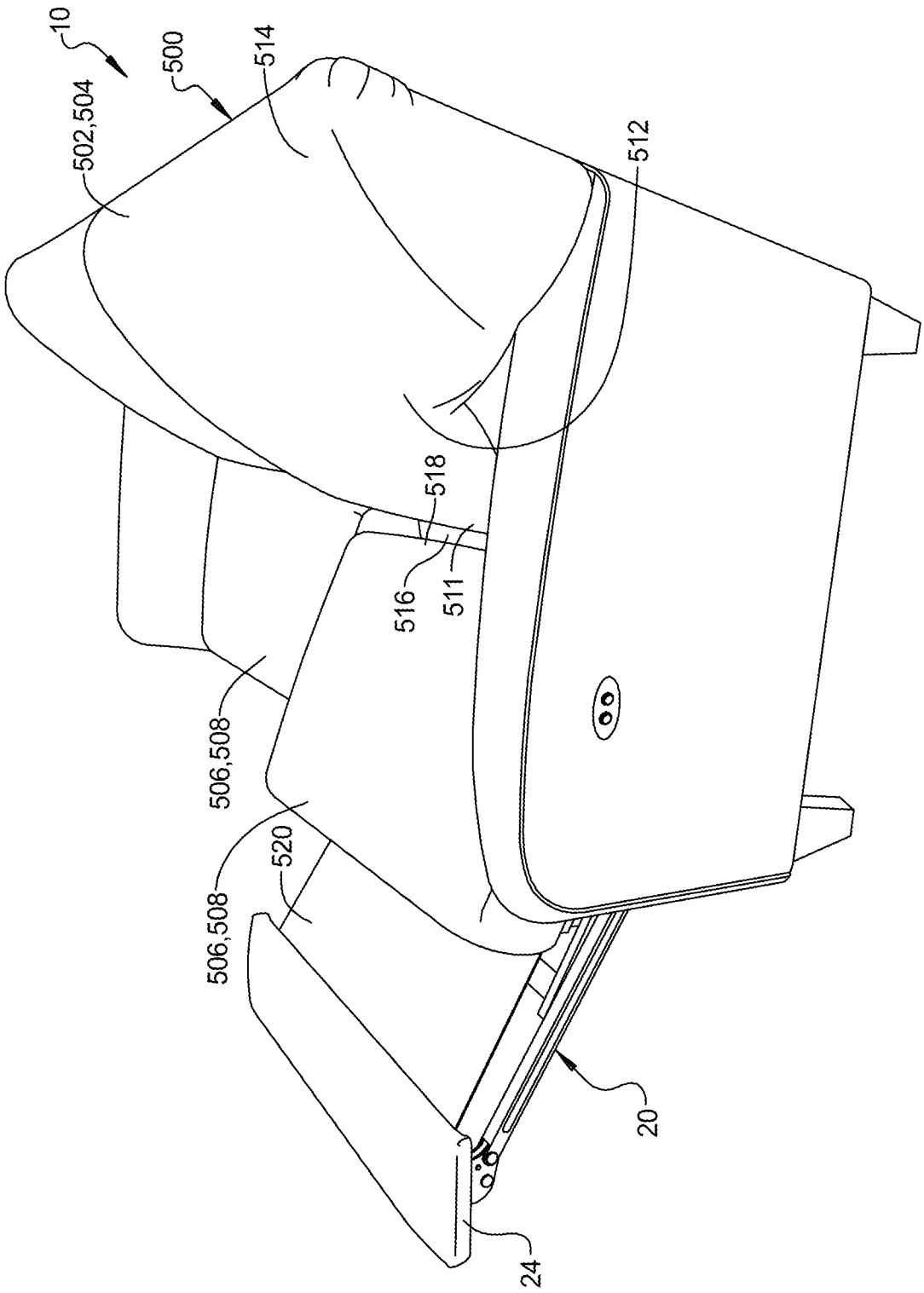

FIG 26

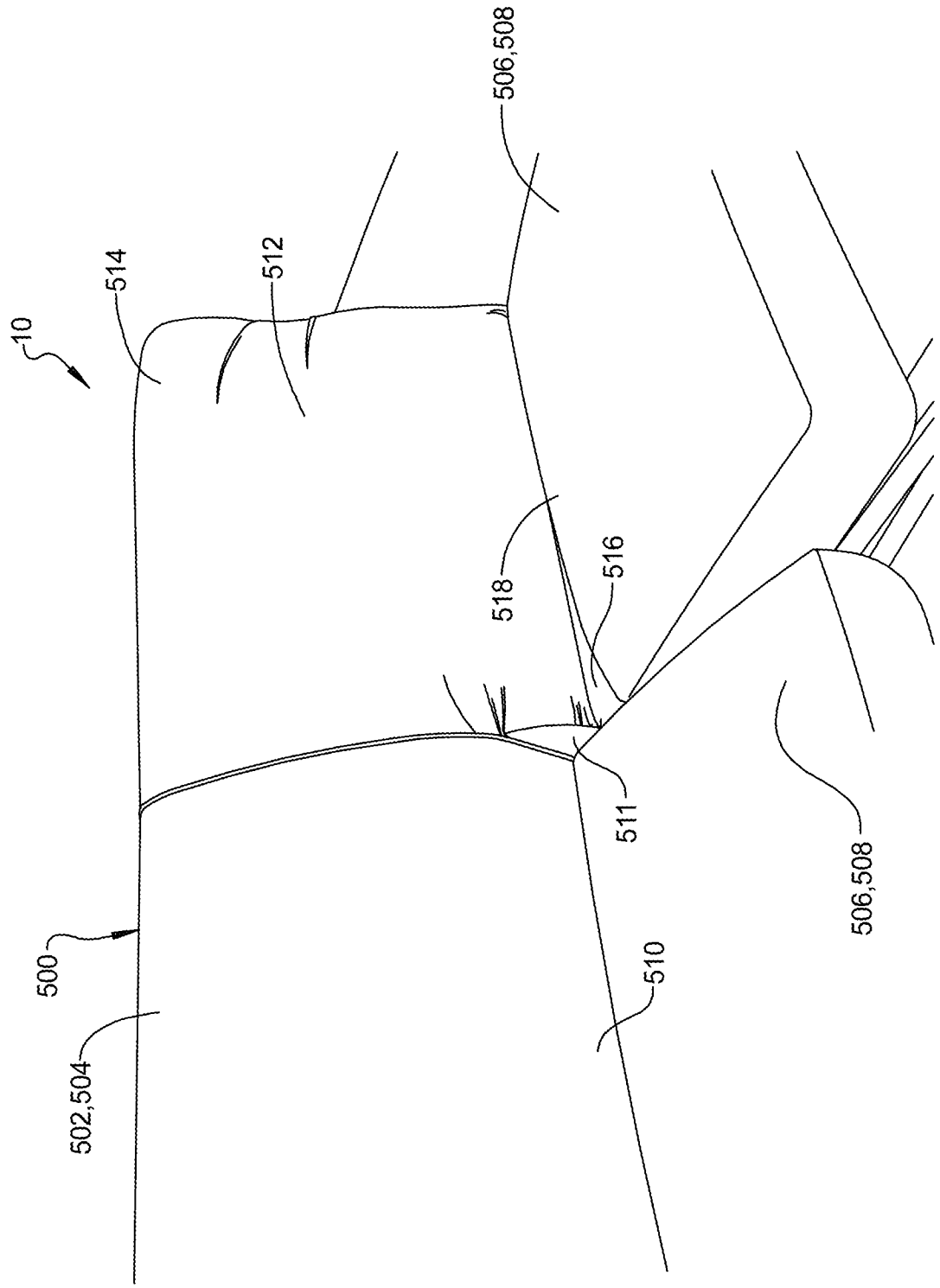

FIG 27

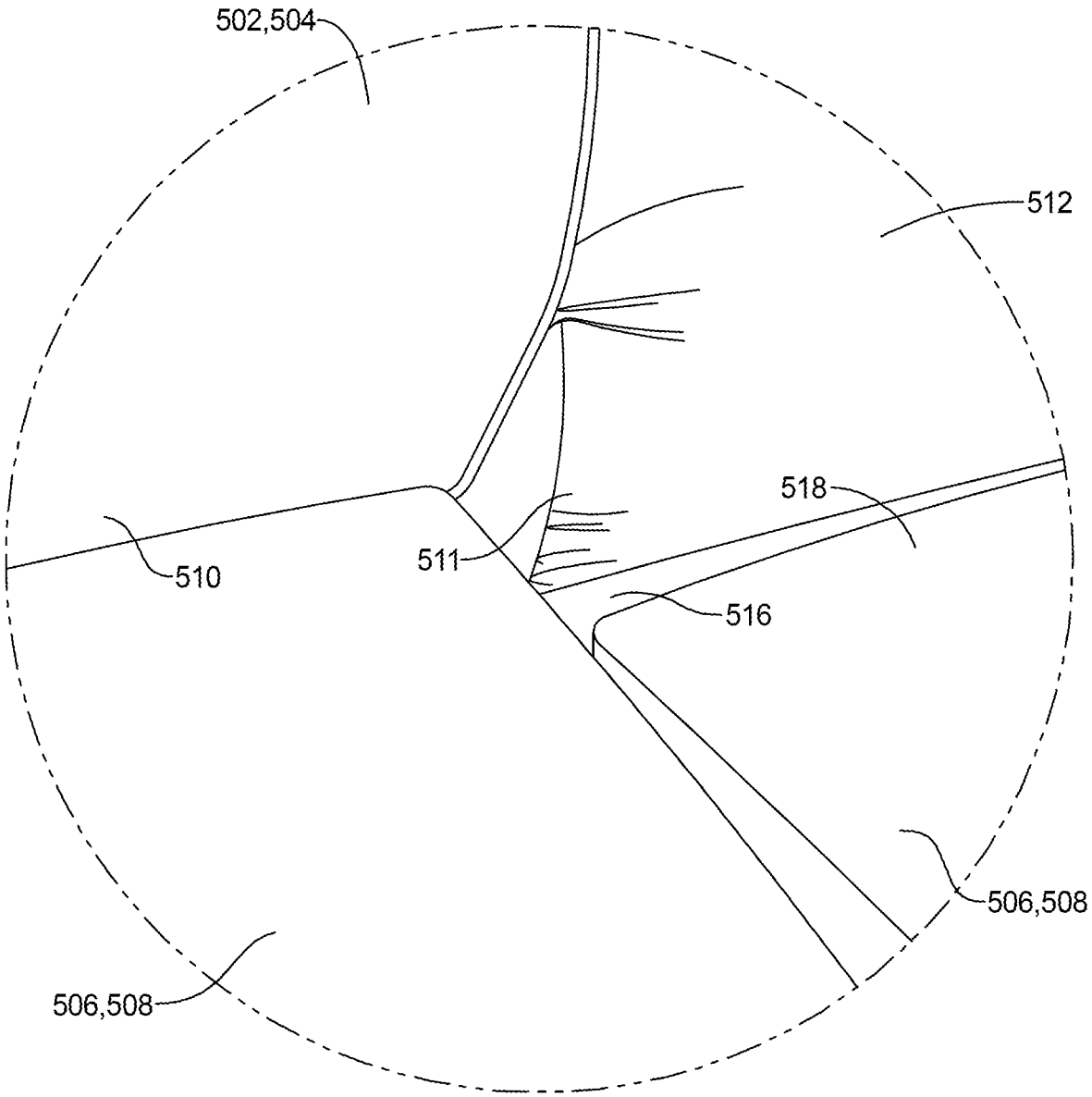

FIG 28