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(72) TAME, OMAR D., US
(71) MAGNA INTERIOR SYSTEMS INC., CA

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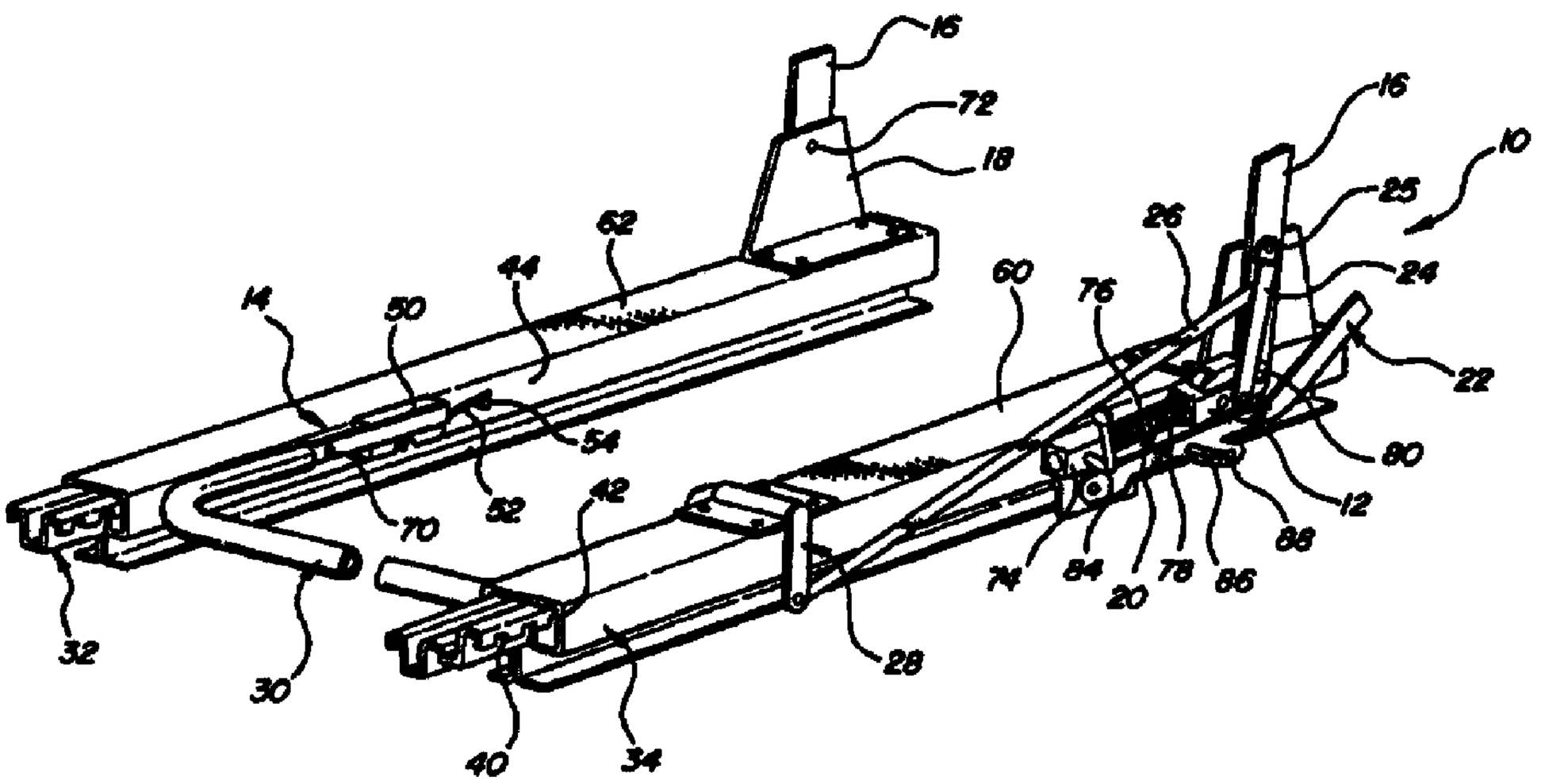
(54) **SIEGE DE VEHICULE POURVU D'UN MECANISME D'INCLINAISON LINEAIRE ET D'UN DISPOSITIF DE VERROUILLAGE A REGLAGE FACILE AVEC MEMOIRE**

(54) **VEHICLE SEAT WITH LINEAR RECLINING MECHANISM AND AN EASY ENTRY LATCH WITH MEMORY**



(57) Cette invention se rapporte à un système de siège (2) à utiliser dans un véhicule automobile, qui comprend un système de rail de siège (6) servant à fixer le siège au véhicule. Un coussin de siège (4) est maintenu en support par ce système de rail (6) et un dossier (8) est fixé pivotant à ce système de rail, de façon à pivoter entre l'une des positions d'inclinaison possibles et une position de basculement vers l'avant. Un actionneur linéaire (10) règle sélectivement le dossier du siège entre plusieurs positions d'inclinaison. Un élément de blocage (80) placé en accouplement entre l'actionneur linéaire (10) et le dossier (8) du siège bloque en position

(57) A seat assembly (2) for use in an automotive vehicle includes a seat track assembly (6) for securing the seat in the vehicle. A seat cushion (4) is supported by the seat track assembly (6) and a seat back (8) is pivotally secured to the seat track assembly (6) and pivotal between one of a plurality of reclining positions and a forward dumping position. A linear actuator (10) selectively adjusts the seat back between the plurality of reclining positions. A locking member (80) intercoupled between the linear actuator (10) and the seat back (8) operatively locks the seat back (8) in one of the plurality of reclining positions and a seat back releasing member

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fonctionnelle le dossier du siège dans l'une des positions d'inclinaison possibles, et un élément (22) de libération du dossier est couplé à l'élément de blocage (80) pour libérer l'élément de blocage du dossier du siège et pour permettre à celui-ci de pivoter entre la position d'inclinaison et la position de basculement, tandis que l'actionneur linéaire (10) mémorise la position d'inclinaison du dossier préalablement réglée. Un élément (48) de blocage du rail bloque sélectivement le système de rail et le siège dans l'une des positions possibles de réglage avant et arrière du siège. Un élément de transmission (26, 28) relie le dossier du siège et l'élément de blocage du rail, de façon à débloquer automatiquement le rail en réponse au mouvement pivotant du dossier de la position d'inclinaison à la position de basculement, pour libérer l'accès dans la zone située derrière le siège.

(22) is coupled to the locking member (80) for releasing the locking member (80) from the seat back and allowing the seat back to pivot from the reclining position to the dumping position while the linear actuator (10) retains the previously adjusted reclining position of the seat back. A track locking member (48) selectively locks the seat track assembly and seat in one of a plurality of fore and aft seat adjustment positions. A transmission member (26, 28) interconnects the seat back and the track locking member for automatically unlocking the seat track in response to pivotal movement of the seat back from the reclining position to the dumping position to allow access to the area behind the seat.

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(71) Applicant: MAGNA INTERIOR SYSTEMS INC. [CA/CA]; 337 Magna Drive, Aurora, Ontario L4G 7K1 (CA).

(72) Inventor: TAME, Omar, D.; 4059 Green Lake Road, West Bloomfield, MI 48324 (US).

(74) Agent: IMAI, Jeffrey, T.; Magna International Inc., 337 Magna Drive, Aurora, Ontario L4G 7k1 (CA).

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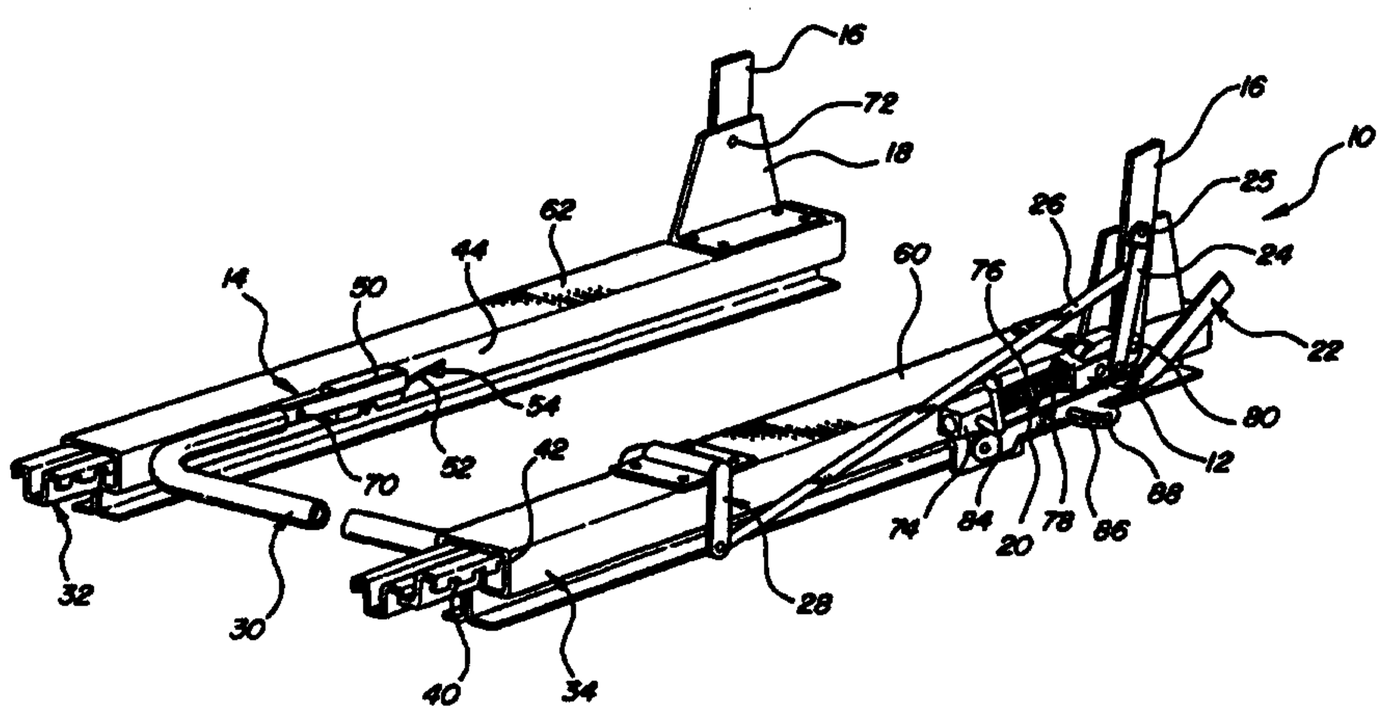

(57) Abstract

A seat assembly (2) for use in an automotive vehicle includes a seat track assembly (6) for securing the seat in the vehicle. A seat cushion (4) is supported by the seat track assembly (6) and a seat back (8) is pivotally secured to the seat track assembly (6) and pivotal between one of a plurality of reclining positions and a forward dumping position. A linear actuator (10) selectively adjusts the seat back between the plurality of reclining positions. A locking member (80) intercoupled between the linear actuator (10) and the seat back (8) operatively locks the seat back (8) in one of the plurality of reclining positions and a seat back releasing member (22) is coupled to the locking member (80) for releasing the locking member (80) from the seat back and allowing the seat back to pivot from the reclining position to the dumping position while the linear actuator (10) retains the previously adjusted reclining position of the seat back. A track locking member (48) selectively locks the seat track assembly and seat in one of a plurality of fore and aft seat adjustment positions. A transmission member (26, 28) interconnects the seat back and the track locking member for automatically unlocking the seat track in response to pivotal movement of the seat back from the reclining position to the dumping position to allow access to the area behind the seat.

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VEHICLE SEAT WITH LINEAR RECLINING MECHANISM AND AN EASY ENTRY LATCH WITH MEMORY

Technical Field

The subject invention relates to a vehicle seat assembly having a linear seat back recliner and an easy entry latch mechanism with memory feature of the seat back recliner position.

Background of the Invention

Vehicle seat assemblies commonly include a seat track assembly for slidably mounting the seat to the floor of the vehicle. A seat cushion is supported by the seat track assembly and a seat back is pivotally supported by the seat cushion or seat track assembly. It is often desirable to adjust the angular or reclining position of the seat back with respect to the seat cushion for user comfort and safety. It is also often desirable to pivot the seat back fully forward, to a dumped position to allow easier access to the area behind the seat assembly. However, once the seat back has been pivoted fully forward to the dumped position, the previously adjusted reclining position is typically lost and the seat back must again be adjusted to the desired seat back reclining position.

Further, the seat track assembly is often unlocked or released when the seat back is pivoted to the dumped position allow forward sliding movement of the entire seat assembly and provide even greater access to the area behind the seat assembly. The release of both the seat back and seat track causes even further difficulty in retaining the previously adjusted reclining position of the seat back upon return from the dumped position.

It is therefore desirable to provide a mechanism which allows release of the seat back for pivotal movement from the adjusted reclining position to the dumped position, while retaining, or memorizing, the previously adjusted reclining position upon return of the seat back.

French Patent No. 1.498.801 and European Patent No. 0 451 035 disclose two contemplated solutions for retaining the previously adjusted position of the seat back when the seat back is returned from a dumped position.

The French '801 patent discloses an adjustment actuator that is disposed below a pivot point of the seat back for moving the seat back between reclined positions. A pivot plate is interconnects the actuator to the seat back and includes a notch for providing a memory feature. A release member is disposed substantially above the pivot point of the seat back for releasing the seat back from the pivot plate such that the seat back may move into a dumped position. The release member engages the notch in the pivot plate when returning from the dumped position, thereby maintaining the original reclined position. The release member is separate and distinct from the actuator and does not directly interact with the actuator. The proposed solution of the French '801 patent incorporates a multitude

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of separated parts which create a cumbersome and expensive design that consumes a significant amount of space along the side of the seat. Further, the release member moves with the seat back such that in certain reclined positions, the release member may be difficult to operate.

The European '035 patent discloses an adjustment actuator disposed on each side of the seat that allows for incremental reclining of the seat back and provides a dumping feature. The actuator is a relatively large strut that is mounted between a front portion of an upper track member and the seat back. Small pivotal abutments are used to lock the seat back to the actuator and to release the seat back during movement to the dumped position. The adjustment actuator is not affected during the dumping of the seat back such that the original reclined position is maintained. Wire cables are connected to the abutments to facilitate the dumping of the seat back. This proposed solution also incorporates a cumbersome design that occupies a significant amount of space on the seat assembly. In addition, after repeated dumping of the seat back, abutments may wear and become ineffective thereby jeopardizing the integrity of the design.

Accordingly, it remains desirable to provide a relatively simple and compact mechanism for providing incremental reclining adjustment and for releasing the seat back to a dumped position, while retaining the previously adjusted reclining position. In addition, the design should be able to withstand repeated actuation of the seat back between normal reclining and dumping movements.

Summary of the Invention

A vehicle seat assembly including a seat mounting assembly for securing the seat in a vehicle. A seat cushion is supported by the seat mounting assembly and a seat back is pivotally secured to the seat mounting assembly and pivotal between one of a plurality of reclining positions and a forward dumping position. A linear actuator selectively adjusts the seat back between the plurality of reclining positions. A locking member is intercoupled between the linear actuator and the seat back to operatively lock the seat back in one of the plurality of reclining positions. A seat back releasing member is coupled to the locking member for releasing the locking member from the seat back and allowing the seat back to pivot from the reclining position to the dumping position while the linear actuator retains the previously adjusted reclining position of the seat back. The seat assembly is characterized by the releasing member having an integral slot with the locking member coupled to the slot to provide a lost motion connection between the locking member and the releasing member such that a relative position of the release member remains substantially the same during the movement of the seat back between the plurality of reclining positions and the dumping position.

The subject invention therefore provides a compact, relatively simple and sound

design for allowing incremental reclining of the seat back and providing for dumping of the seat back while maintaining an original reclined position. The entire mechanism is disposed below the pivot point of the seat back on one side of the seat assembly. The compact design of the mechanism allows for a lighter seat assembly that does not interfere with the aesthetics or other parts of the seat. Finally, since the position of the release member relative to the seat cushion will remain substantially the same during the movements of the seat back, the release member is always accessible and easily actuated.

Brief Description of the Drawings

Figure 1 is a left side elevational view of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention;

Figure 2 is a fragmentary perspective view looking downwardly at the left side of a portion of the frame structure of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention as configured in the normal generally erect position;

Figure 3 is a fragmentary perspective view of the latching assembly of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory shown in Figures 1 and 2;

Figure 4 is a fragmentary left side profile view of the latching assembly of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention as configured in the normal generally erect position;

Figure 5 is a view similar to Figure 4 showing the position of the latching assembly components after the seat back actuating mechanism has been moved into the operative position;

Figure 6 is an exploded fragmentary perspective view of the track structure lock releasing mechanism of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention;

Figure 7 is a fragmentary profile view of a track structure lock releasing mechanism for a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention as configured in a locked position;

Figure 8 is a view similar to Figure 7 showing the position of the track structure lock releasing mechanism after the seat back actuating mechanism has been moved into the

operative position;

Figure 9 is a fragmentary left profile view of the latching assembly of a vehicle seat with a linear reclining mechanism and an easy entry latch with memory embodying the principles of the present invention as configured in the generally reclined position; and

Figure 10 is a view similar to Figure 9 showing the position of the latching assembly components after the seat back actuating mechanism has been moved into the operative position.

Detailed Description of the Preferred Embodiment

Referring to Figures 1-10, wherein like numerals indicate like or corresponding parts throughout the several views, there is shown a vehicle seat, generally indicated at 2, which includes a seat cushion assembly, generally indicated at 4, mounted on the vehicle floor for fore and aft movements by a seat mounting assembly, generally indicated at 6. The seat assembly 2 also includes a seat back cushion assembly, generally indicated at 8, mounted on the seat cushion assembly 2 for forward dumping movement, and for rearward reclining movements by a seat back mounting assembly, generally indicated at 10. Embodied within the seat back mounting assembly is an easy entry control assembly, generally indicated at 12, having a linear reclining function with memory after dumping in accordance with the principles of the present invention.

The seat cushion assembly 4 excluding the seat mounting assembly 6 may be of any well known construction which includes a rigid frame constructed and arranged to carry a seat cushion of foamed polyurethane or the like which has on its exterior a cover of suitable material. Similarly, the seat back cushion assembly 8 may be of any well known construction including a frame structure constructed and arranged to support a seat back cushion which has on its exterior a cover of suitable material. The seat mounting assembly 6 of the seat cushion assembly 4 includes two transversely spaced pairs of cooperating track assemblies, generally indicated at 14. The seat back mounting assembly 10 includes a pair of seat back support members 16 which are fixed on opposite sides of the frame structure of the seat back cushion assembly 8. Each seat back support member 16 is rotatably mounted on a seat back support base structure 18, fixedly mounted with respect to the frame of the seat cushion assembly 4.

As best shown in Figures 2-5 and 9-10, the control assembly 12 controls the pivotal

movement of the seat back cushion assembly 8 with respect to the seat cushion assembly 4 provided by virtue of the pivotal connections between the seat back support members 16 and base structures 18. In order to control the reclining movements, the control assembly 12 includes a linear actuator assembly, generally indicated at 20, which is pivotally connected to one of the cooperating pairs of track assemblies 14. A seat back releasing member, generally indicated at 22, is pivotally attached to the rearward end of the linear actuator assembly 20 and engages and releases the seat back support member 16 to allow easy access and return to the same reclining position. A linear actuator assembly support structure 24 is provided for supporting the end of the linear actuator assembly 20 during easy access and return. As shown, the support structure 24 is pivoted at its upper end to the pivot pin 25, which pivotally connects the associated support member 16 and base structure 18, and at its lower end to the rearward end of the linear actuator assembly 20. An operation transmission member 26, at its most rearward end, is rotatably mounted at a position proximate to the middle portion of the support member 24. An operation linking member, generally indicated at 28, is rotatably mounted at its lower-most end to the forward end of the operation transmission member 26. The operation linking member 28 is best shown in Figures 2 and 6 to extend up and over the track assembly 14 to terminate at an integral rotating contact structure 29. A lock release coordinating structure, generally indicated at 30, is rotatably attached at each end respectively to one of the pairs of track assemblies 14.

The seat cushion mounting assembly 6 of the seat cushion assembly 4 may include in addition to the pairs of track assemblies 14 a spring bias to a forward-most position to facilitate access. The seat back cushion mounting assembly 10 is preferably also provided with a spring bias for the seat back cushion assembly to tend toward a generally erect position constituting the forward most position in the range of reclining positions provided.

While the preferred embodiment shown contemplates an access position of the vehicle seat 2 wherein the seat back cushion assembly 8 is pivoted forwardly into a dump position overlying the seat cushion assembly 4 and the seat cushion assembly 4 is moved forwardly from its operating position into an access position, the principles of the present invention are applicable to seats wherein the seat back cushion assembly 8 is moved forwardly into a dumping position but there is no forward movement of the seat to an access position. Moreover, while the forward access movement of the seat which is provided by

the illustrated preferred embodiment does not include a memory function, the principles of the present invention are equally applicable to seats which have this memory function built on in any known manner.

The pair of track assemblies 14 as shown are constructed in accordance with the disclosures contained in U.S. Patent Nos. 5,286,076 and 5,741,000, the disclosures of which are hereby incorporated by reference into the present specification. Each pair of track assemblies 14 includes a fixed track member 32 which is fixedly secured to the floor of the vehicle and a movable track member 34 which is fixed to the frame of the seat cushion assembly 4 so as to form a part thereof.

As best shown in Figures 2 and 6, each fixed track member 32 provides a pair of longitudinally aligned guide portion 38 defining a series of locking openings 40. The movable track member 34 is of a cross-sectional configuration such as to present center-facing, opposing, top-connected, C-shaped end portions 42. As best shown in Figure 6, an inboard surface 44 of each movable track member 34, defines a locking member portal 46 disposed adjacent to the series of locking openings 40 which are presented on the guide portion 38 of the associated fixed track member 32. A track locking member, generally indicated at 48, is sized and configured to freely enter each locking member portal 46. The locking member 48 is adapted to selectably and releasably interlock with selected sections of the guide portion 38 which define the series of locking openings 40. In the fully assembled operational state, the locking member 48 is positioned within the locking member portal 46 and in vertical alignment with the guide portion 38 of the fixed track 32. A portion of the track locking member projection 48 extends outwardly through the locking member portal 46 and is integral with a spring biased plate member 50. The spring biased plate member 50 is upwardly spring biased by a spring structure 52 which is secured at each end to the inboard surface 44 of the movable track member 34 by a spring securing member 54. The outer surface of the spring biased plate member 50 defines an elongated plate member slot 56.

Proximate to each end of the lock release coordinating structure 30 is a lock coordinating projection member 58 which is adapted to fit within and serves to transmit vertical motion of the lock coordinating projection member 58 to the plate member slot 56 of the spring biased plate member 50. The plate member slot 56 is configured so as to retain

but also permit limited motion of the lock coordinating projection member 58.

The two movable track assemblies 34 when referred to individually hereinafter will be referred to as a first movable track assembly 60 and a second movable track assembly 62. Fixedly attached and proximate to the end of the lock release coordinating structure 30 which is adjacent the first movable track assembly 60 is an outer plate member 66, best shown in Figs. 6-8. A link abutment surface 68 is defined on an upper portion of the outer surface of the outer plate member 66. The lock release coordinating structure 30, proximate to each end thereof, is pivotally mounted near the center section of the inboard surface 44 of the pair of movable track assemblies 34 by a coordinating member pivot structure 70.

The back support members 16 are each pivotally mounted to the upper portions of their respective base structures 18 by a back support pivot member 25. The control assembly 12 is mounted proximate to the base structure 18 on first movable track assembly 60. The linear actuator assembly 20 includes a linear actuator extension member locking assembly 74 which is mounted on the outboard side of the first movable track assembly 60. Passing through and extending rearwardly is a releasably attached elongated extension member 76 which terminates in an abutting structure 78. A seat back locking member 80 is pivotally mounted to the abutting structure 78 such that its uppermost portion can be selectively rotated by operation of the seat back releasing member 22 against a spring bias into (1) an open position above the abutting structure 78 as shown in Fig. 10 or (2) can be returned by action of the spring bias to a closed position rearward of the abutting structure 78 as shown in Fig. 9. The abutting structure 78 abuts against and serves to prevent forward motion of a seat back support locking pin structure 82 which is fixedly attached on the outboard surface of the lower portion of the seat back support member 16.

In operation, a linear actuator releasing member 84 when placed in an unlocked position by an operator acts on the locking assembly 74, in a manner as is well known in the art, to release the extension member 76 allowing the extension member 76 to move forward or rearward as desired by the operator. As best shown in Figures 4, 5, 9 and 10 the seat back support locking pin 82, being abutted against the rearward surface of the abutting structure 78 will be displaced rearward by the rearward movement of the abutting structure 78. The seat back locking member 80 being spring biased to a closed position, rearward of the abutting structure 78, is normally in a locked position against the rear surface of the seat

back support locking pin structure 82. Thus, in the normal locked position of the seat back locking member 80, the seat back locking pin structure 82 is secured between the abutting structure 78 and the seat back locking member 80. Therefore, when the linear actuator releasing member 84 is placed in the unlocked position and the extension member 76 is freed to move forward or rearward, the back support locking pin structure 82, which is secured between the abutting structure 78 and the pivotally mounted seat back locking member 80, follows forward or rearward, thereby adjusting the position of the seat back cushion assembly 8. The operator's use of the linear actuator releasing member 84 to effect an adjustment of the degree of forward or rearward recline of the seat back has no effect on the position of the track assemblies 14.

As shown in Figure 2, the seat back releasing member 22 is pivotally mounted to and extends rearwardly generally parallel to the first movable track assembly 60. As best shown in Figures 4, 5, 9 and 10, a seat back releasing member slot 86 is defined in the lower middle portion of the seat back releasing member 22 and slidably receives therein a seat back locking member contact structure 88 which projects from the lower portion of the seat back locking member 80. The releasing member slot 86 and the locking member contact structure 88 are configured such that upon upward rotational movement of the seat back releasing member 22 by an operator, the locking member contact structure 88 will be urged in a rearward direction by interaction with the releasing member slot 86, and as a result of the pivotal mounting of the seat back locking member 80 to the abutting structure 78, the seat back locking member 80 will pivot upward against the spring bias to the open position, thereby releasing the seat back locking pin structure 82. Upon such release, the seat back locking pin structure 82 and the fixedly attached lower portion of the seat back support member 16 will be free to pivotally rotate rearwardly about the seat back support pivot member 25, thereby allowing the seat back cushion assembly 8 to pivoted forwardly. Forward rotation of the seat back locking pin structure 82 is still prohibited by the position of the abutting structure 78.

As the seat back cushion assembly 8 rotates forwardly, the abutting structure 78 remains in its last position prior to movement of the seat back support member 16. By remaining in its last position, the abutting structure 78 maintains a memory of the last position of the seat back support member 16 and the seat back cushion assembly 8 prior to

actuation of the seat back releasing member 22. Upon actuation of the seat back releasing member 22, the operation transmission member 26, being pivotally mounted to the lower portion of the seat back support member 16, will be pulled rearwardly as the seat back cushion assembly 8 is moved forwardly.

Upon return of the seat back cushion assembly 8 and the attached seat back support members 16 to the original position, the seat back locking pin structure 82 will initially strike against the rearward surface of the spring biased seat back locking member 80. As best shown in Figures 4-5 and 9-10, the rearward surface of the seat back locking member 80 is configured such as to allow the seat back locking pin structure 82 to urge the seat back locking member 80 against the spring bias until the locking pin structure 82 reaches the point where it is recaptured between the seat back locking member 80 and the abutting structure 78. Because the abutting structure 78 was maintained in its original position by the linear actuator support member 24, the seat back support structures 16 and the attached seat back cushion assembly 8 are, by the memory feature of the invention, held in the same position as they were prior to the actuation of the seat back releasing member 22. The linear actuator releasing member 84, when used by the operator to change the degree of erectness or recline of the seat back cushion assembly 8, also serves to reset the memory feature of the invention by repositioning the abutting structure 78.

As shown in Figures 2, 7 and 8, the pivotally mounted operation linking member 28 will be rotated by the rearward motion of the pivotally connected operation transmission member 26 in such a manner as to cause downward rotation of the integral rotating contact structure 29. The rotating contact structure 29 when rotated downward abuts against the outer plate link abutment surface 68 forcing the outer plate member 66 and the fixedly attached lock release coordinating structure 30 downward. The spring biased plate member 50 follows downward as a result of interaction through its plate member slot 56 with the coordinating member projection 58. Downward rotational movement of the end portion of the coordinating member 30 at the first movable track assembly 60 is transmitted across to the second movable track assembly 62 and is thus simultaneously accomplished at both movable track assemblies 34. Simultaneous downward motion of both spring biased plate members 50 results in the downward motion of the respective integral track locking members 48. The track locking members 48 are thus released from an interlocking

engagement with the guide portions 38 of the fixed track assemblies 32, thereby allowing movement of the movable track assemblies 34. Conventionally, the seat cushion mounting assembly 6 provides a spring bias for the movable track assemblies 34 to move forward when the movable track assembly is unrestrained. Thus, by operating the seat back releasing member 22, the seat back cushion assembly 8 has been freed to pivotally rotate forwardly in an overlying relation to the seat cushion assembly 2 while simultaneously freeing the movable track assemblies 34 in a coordinated fashion such that the seat can be moved forward to provide greater ease of access to a rear seat passenger area.

Importantly, although a downward push against the link abutment surface 68 from the rotating contact structure 29 will effect the release of the movable track assembly 34, there is no direct linkage between the rotating contact structure 29 and the link abutment surface 68 of the outer plate member 66. When an operator selectively pulls upward on the lock release coordinating structure 30, the outer plate member 66 and its link abutment surface 68 move downward to release the movable track assemblies 34 from the fixed track assemblies 32. However, because there is no direct linkage between the link abutment surface 68 and the rotating contact structure 29, there is no responsive movement of the rotating contact structure 29. Thus, the release of the movable track assembly 34, when effected by an operator selectively using the lock release coordinating structure 30, does not result in any release or adjustment to the degree of recline of the seat back cushion assembly 8.

The memory feature of the invention is most clearly demonstrated by comparison of Figures 4, 5, 9 and 10. The operation of the control assembly 23 upon movement of the seat back cushion assembly 8 from the normal generally erect position to the forward dump position, as shown in Figures 4 and 5, when compared to the operation of the control assembly 12 when the operation is initiated from the generally reclined position to the forward dump position, as shown in Figures 9 and 10, clearly shows that the linear actuator assembly 20, in conjunction with the linear actuator assembly support member 24, provides a memory feature of the invention by retaining the abutting structure 78 in previously adjusted position when the seat back cushion assembly 8 is pivoted rearwardly from the forward dump position. Upon return of the seat back support members 16 to a locked position the degree of seat back recline or erectness as earlier selected by operation of the

linear actuator releasing member 84 will be preserved.

The invention thus allows operation of the lock release coordinating structure 30 and release of the movable track assemblies 34 without effect on the selected and locked recline position of the seat back cushion assembly 8. Further, upon operation of the seat back releasing member 22, the invention provides a coordinated dual action release of the seat back support members 16 and the movable track assemblies 34. Throughout this dual action operation of the invention, the linear actuator assembly 20 is retained in the last selected position by the memory feature of the invention such that upon returning the seat back to a generally erect or reclined position, the seat back locking pin structure 82 will be recaptured in the same location from which it was earlier released without further adjustment.

The invention has been described in an illustrative manner, and it is to be understood that the terminology which has been used is intended to be in the nature of words of description rather than of limitation. Many modifications and variations of the present invention are possible in light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

WHAT IS CLAIMED IS:

1. A vehicle seat assembly (2) including:

a seat mounting assembly (6) for securing said seat assembly (2) in a vehicle;

a seat cushion (4) supported by said seat mounting assembly (6);

a seat back (8) pivotally secured to said seat mounting assembly (6) and pivotal between one of a plurality of reclining positions and a forward dumping position;

a linear actuator (20) for selectively adjusting said seat back (8) between said plurality of reclining positions defining an adjusted reclining position, said linear actuator (20) including an elongated extension member (76) terminating in an abutting structure (78) for engaging and pivoting said seat back (8) between said reclining positions;

a locking member (80) intercoupled between said linear actuator (20) and said seat back (8) for operatively locking said seat back (8) in said adjusted reclining position, said locking member (80) pivotally mounted to said abutting structure (78) for selective rotation between an open position and a closed position; and

characterized by a seat back releasing member (22) coupled to said locking member (80) for rotating said locking member (80) from said closed position, engaging and retaining said seat back (8) in said adjusted reclining position, to said open position disengaged from said seat back (8) to allow said seat back (8) to pivot to said dumping position whereby said seat back (8) returns to said adjusted reclined position maintained by said linear actuator.

2. A vehicle seat assembly (2) as set forth in claim 1 wherein said releasing member (22) has a slot (86) and said locking member (80) being coupled to said slot (86) providing a lost motion connection between said locking member (80) and said releasing member (22) whereby said release member (22) and said seat cushion (4) substantially maintain a position relative to each other.

3. A vehicle seat assembly (2) as set forth in claim 2 wherein said locking member (80) is pivotally connected to said abutting structure (78) for automatically engaging and locking said seat back (8) in said reclining position.

4. A vehicle seat assembly (2) as set forth in claim 3 further including a linear actuator support structure (24) having a first end pivotally connected to said seat back (8) and a second end pivotally connected to said linear actuator (20) for supporting and guiding said seat back (8) between said plurality of reclining positions and said dumping position.

5. A vehicle seat assembly (2) as set forth in claim 4 further including a seat back support pivot member (16) for pivotally connecting said seat back (8) and said first end of said linear actuator support structure (24) to said seat mounting assembly (6).

6. A vehicle seat assembly (2) as set forth in claim 5 wherein said seat back releasing member (22) includes a first end pivotally connected to said seat mounting assembly (6), a

second distal end for actuating said releasing member (22) and a middle portion therebetween coupled to said seat back locking member (80) for pivoting said locking member (80) between a locked position engaging and retaining said seat back (8) in said reclining position and an unlocked position releasing said seat back (8) for movement to said dumping position.

7. A vehicle seat assembly (2) as set forth in claim 6 wherein said slot (86) has a substantially arcuate configuration and is integrally disposed within said middle portion of said releasing member (22).

8. A vehicle seat assembly (2) as set forth in claim 7 wherein said locking member (80) includes a contact structure (88) engaging said arcuate slot (86) of said release member (22) for interconnecting said lock member (80) to said release member (22).

9. A vehicle seat assembly (2) as set forth in claim 8 wherein said linear actuator (20) further includes a linear actuator releasing member (84) and an elongated extension member (76) extending between said releasing member (22) and said abutting structure (78) for linearly translating said abutting structure (78) to adjust said seat back (8) to one of said plurality of reclining positions.

10. A vehicle seat assembly (2) as set forth in claim 9 wherein said seat mounting assembly (6) includes a track assembly (60, 61) for providing fore and aft sliding movement of said seat assembly (2).

11. A vehicle seat assembly (2) as set forth in claim 10 wherein said track assembly (60, 61) includes a pair of fixed track members (32) for securing said seat assembly (2) to the vehicle and a pair of moveable track members (34) slidably coupled to said respective fixed track members (32) for providing said fore and aft seat movement.

12. A vehicle seat assembly (2) as set forth in claim 11 wherein said track assembly (60, 61) further includes a track locking member (48) for interlocking said fixed (32) and said moveable (34) track members in one of a plurality of fore and aft adjusted positions.

13. A vehicle seat assembly (2) as set forth in claim 12 wherein said track assembly (60, 61) further includes a track lock release member (30) for selectively locking and unlocking said fixed (32) and moveable (34) track members in said fore and aft adjusted position.

14. A vehicle seat assembly (2) as set forth in claim 13 further including a transmission member (26) extending between said seat back (8) and said track locking member (48) for unlocking said track locking member (48) in response to pivotal movement of said seat back (8) from said reclining position to said dumping position.

15. A linear reclining mechanism adapted for use with a vehicle seat (2) including:

a linear actuator (20) for selectively adjusting the seat (2) between a plurality of reclining positions defining an adjusted reclining position, said linear actuator (20)

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including an elongated extension member (76) terminating in an abutting structure (78) for engaging and pivoting the seat (2) between said reclining positions;

a locking member (80) intercoupled between said linear actuator (20) and the seat (2) for operatively locking the seat (2) in said adjusted reclining position, said locking member (80) pivotally mounted to said abutting structure (78) for selective rotation between an open position and a closed position; and

characterized by a releasing member (22) coupled to said locking member (80) for rotating said locking member (80) from said closed position, engaging and retaining said seat (2) in said adjusted reclining position, to said open position disengaged from said seat (2) to allow said seat (2) to pivot to said dumping position whereby said seat (2) returns to said adjusted reclined position maintained by said linear actuator.

16. A vehicle seat assembly (2) as set forth in claim 15 wherein said releasing member (22) has a slot (86) and said locking member (80) being coupled to said slot (86) providing a lost motion connection between said locking member (80) and said releasing member (22) whereby said release member (22) and the seat (2) substantially maintain a position relative to each other.

17. A linear reclining mechanism as set forth in claim 16 wherein said locking member (80) is pivotally connected to said abutting structure (78) and adapted to automatically engage and lock the seat (2) in said reclining position.

18. A linear reclining mechanism as set forth in claim 17 wherein said releasing member (22) includes a first end, a second distal end for actuating said releasing member (22) and a middle portion therebetween coupled to said locking member (80) for pivoting said locking member (80) between a lock position when the seat (2) is in said reclining position and an unlocked position releasing said locking member (80) for to movement of the seat (2) to said dumping position.

19. A linear reclining mechanism as set forth in claim 18 wherein said slot (86) has a substantially arcuate configuration and is integrally disposed within said middle portion of said releasing member (22).

20. A linear reclining mechanism as set forth in claim 19 wherein said locking member (80) includes a contact structure (88) engaging said arcuate slot (86) of said release member (22) for interconnecting said lock member (80) to said release member (22).

21. A linear reclining mechanism as set forth in claim 20 wherein said linear actuator (20) further includes a linear actuator releasing member (84) and an elongated extension member (76) extending between said releasing member (22) and said abutting structure (78) for linearly translating said abutting structure (78) to one of said reclining positions.

22. A mounting assembly (6) adapted for securing and adjusting a seat (2) in a vehicle, said assembly (6) including:

a track assembly (60, 61) having a pair of fixed track members (32) for securing the seat (2) to the vehicle and a pair of moveable track members (34) slidably coupled to said respective fixed track members (32) for providing for and aft movement; secured to said track assembly (60, 61) for selectively adjusting the seat (2) between a plurality of reclining positions and a dumping position;

a linear actuator (20) secured to said track assembly (60, 61) for selectively adjusting the seat (2) between a plurality of reclining positions defining an adjusted reclining position, said linear actuator (20) including an elongated extension member (76) terminating in an abutting structure (78) for engaging and pivoting the seat (2) between said reclining positions;

a locking member (80) intercoupled between said linear actuator (20) and the seat (2) for operatively locking the seat (2) in said adjusted reclining position, said locking member (80) pivotally mounted to said abutting structure (78) for selective rotation between an open position and a closed position; and

characterized by a releasing member (22) coupled to said locking member (80) for rotating said locking member (80) from said closed position, engaging and retaining said seat (2) in said adjusted reclining position, to said open position disengaged from said seat (2) to allow said seat (2) to pivot to said dumping position whereby said seat (2) returns to said adjusted reclined position maintained by said linear actuator.

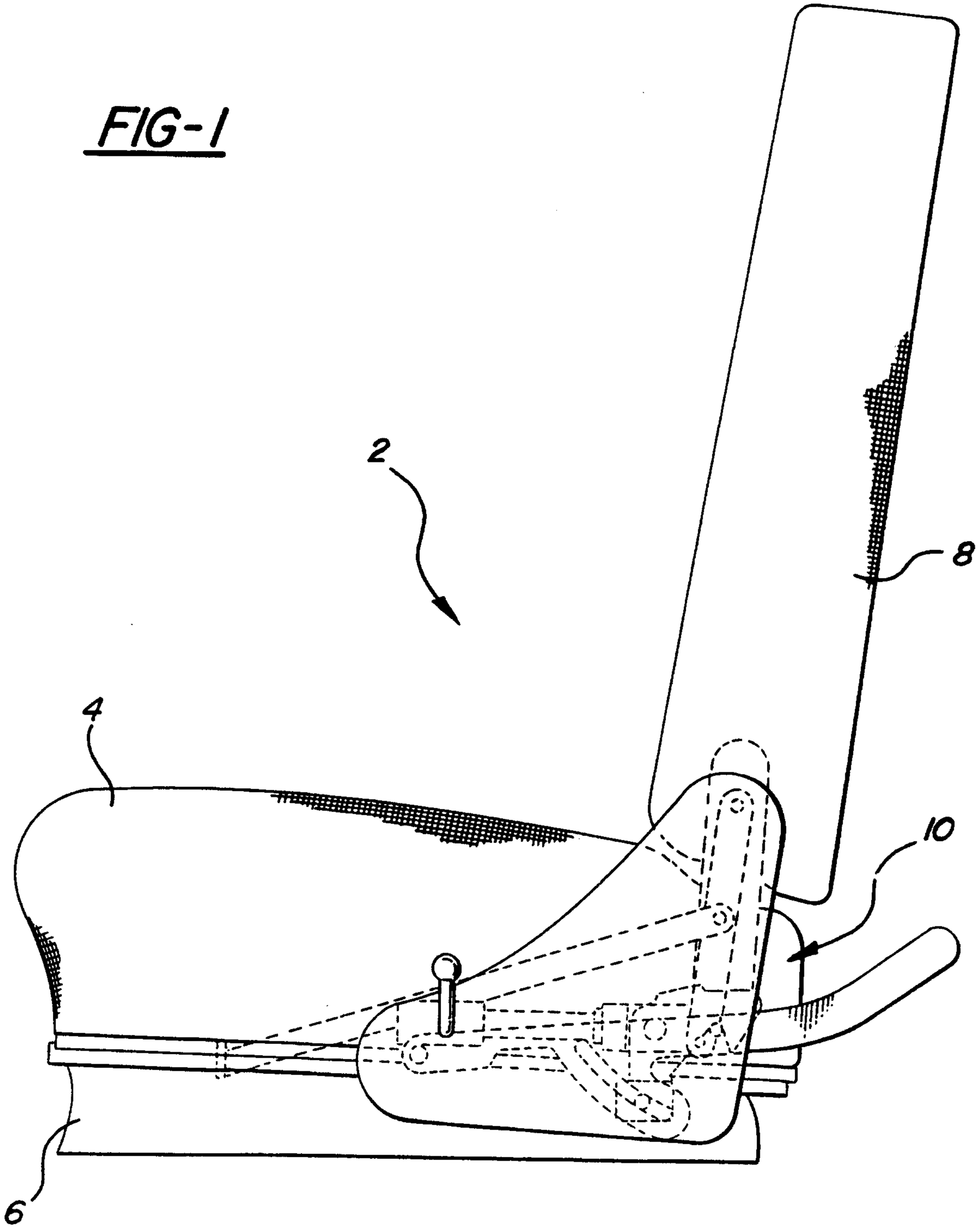
23. A mounting assembly (6) as set forth in claim 22 further including a track locking member (48) for interlocking said fixed (32) and moveable (34) track members in one of a pivotally of fore and aft adjusted positions.

24. A mounting assembly (6) as set forth in claim 23 further including a linear actuator support structure (24) having a first end for attachment to the seat (2) and a second end pivotally connected to said linear actuator (20) for supporting and guiding the seat (2) between said plurality of reclining positions and said dumping positions.

25. A mounting assembly (6) as set forth in claim 24 further including a transmission member (26) extending between said support structure (24) and said track locking member (48) for unlocking said track locking member (48) in response to pivotal movement of said support structure (24) from said reclining position to said dumping position.

26. A vehicle seat assembly (2) as set forth in claim 25 wherein said releasing member (22) has a slot (86) and said locking member (80) being coupled to said slot (86) providing a lost motion connection between said locking member (80) and said releasing member (22) whereby said release member (22) and the seat (2) substantially maintain a position relative to each other.

FIG-1



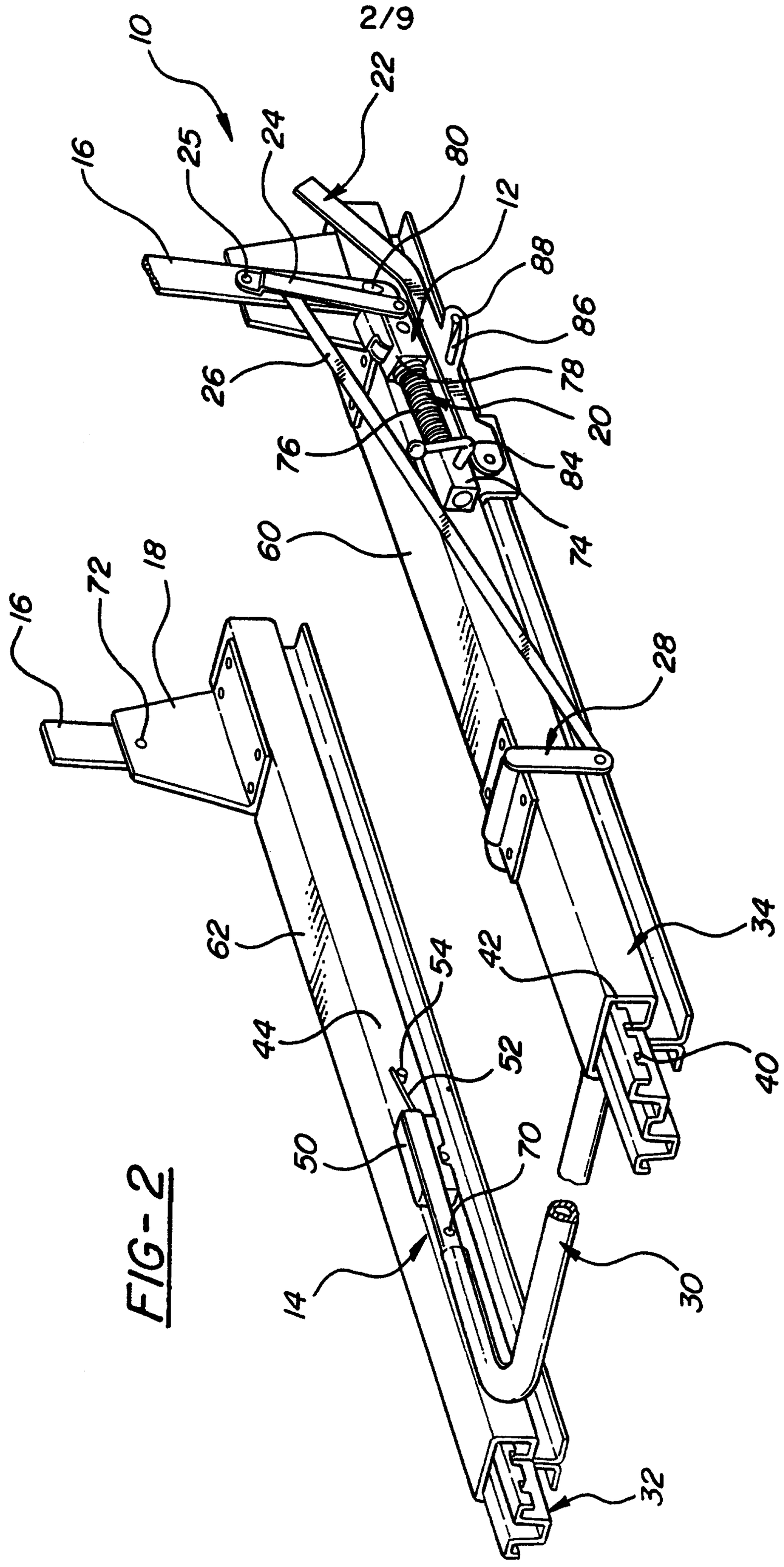

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FIG-2

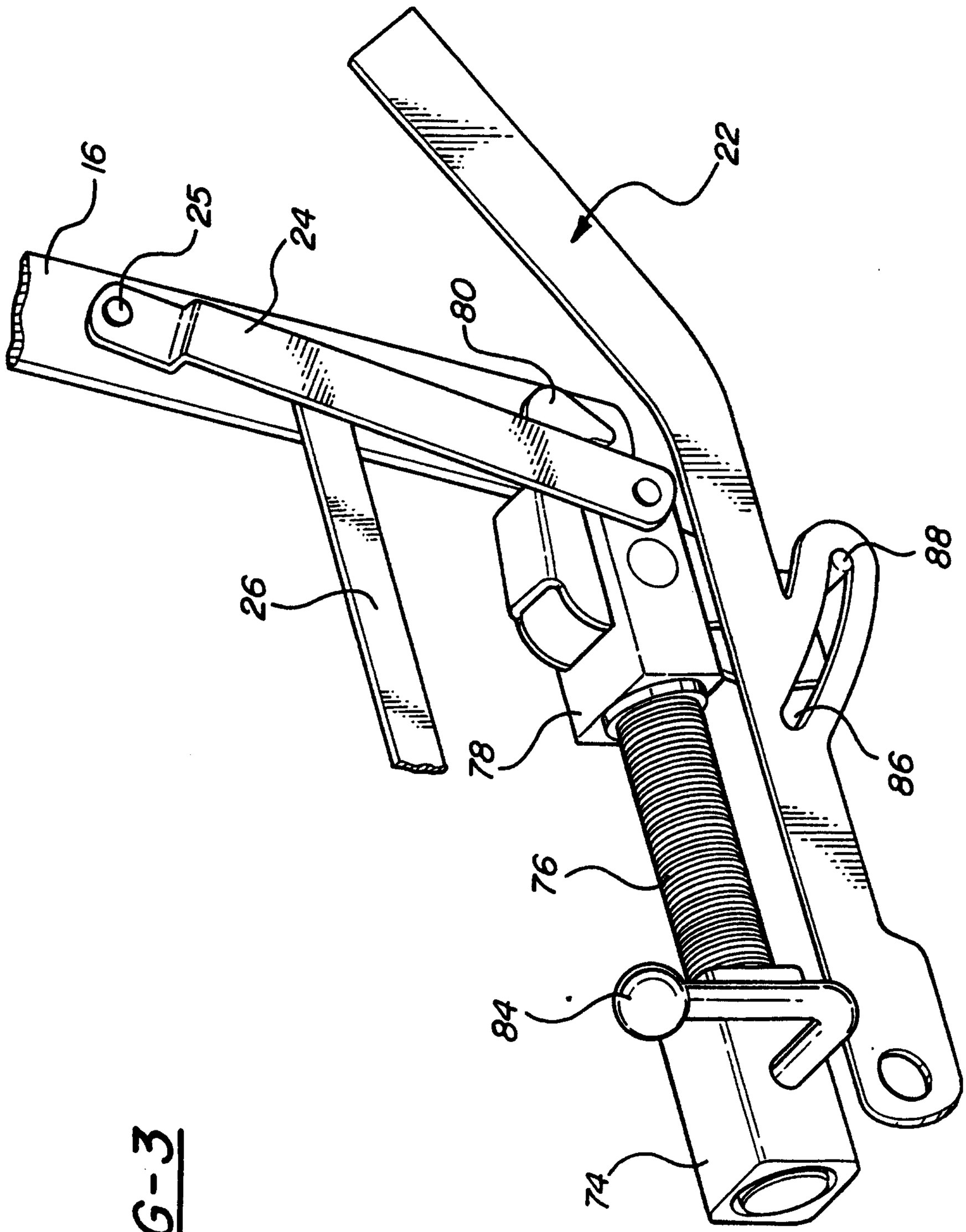


FIG-3

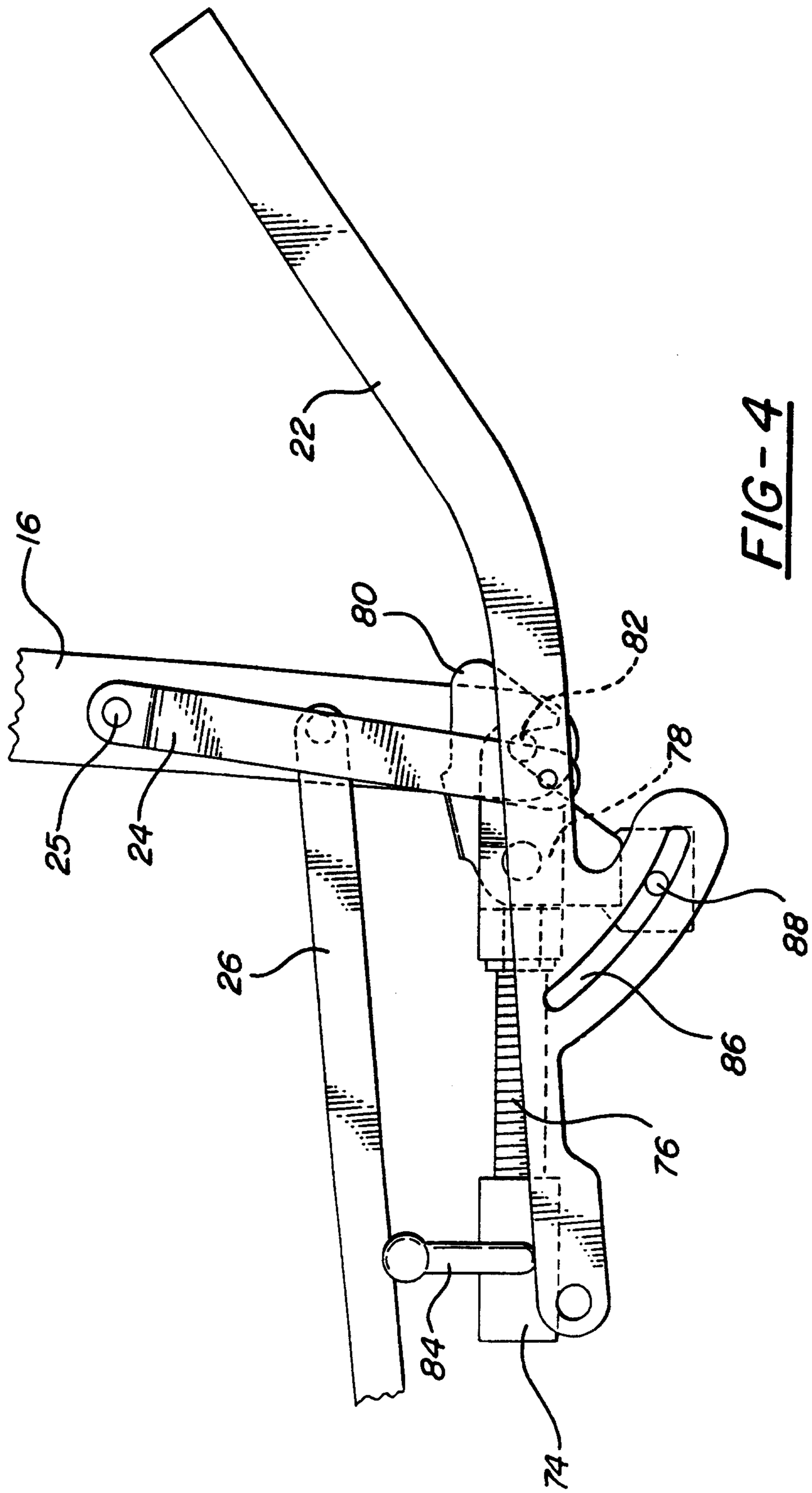


FIG-4

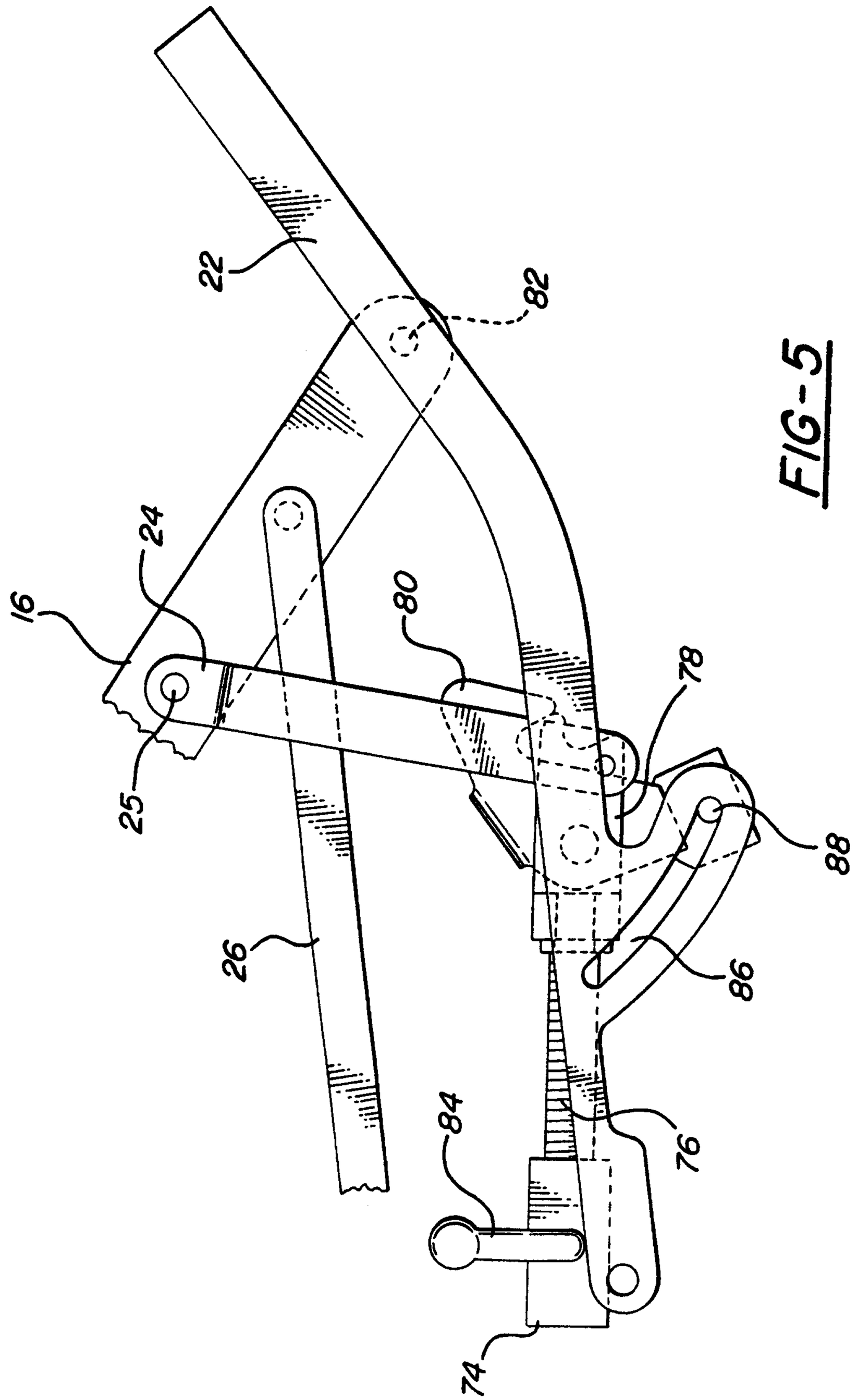


FIG-5

FIG-6

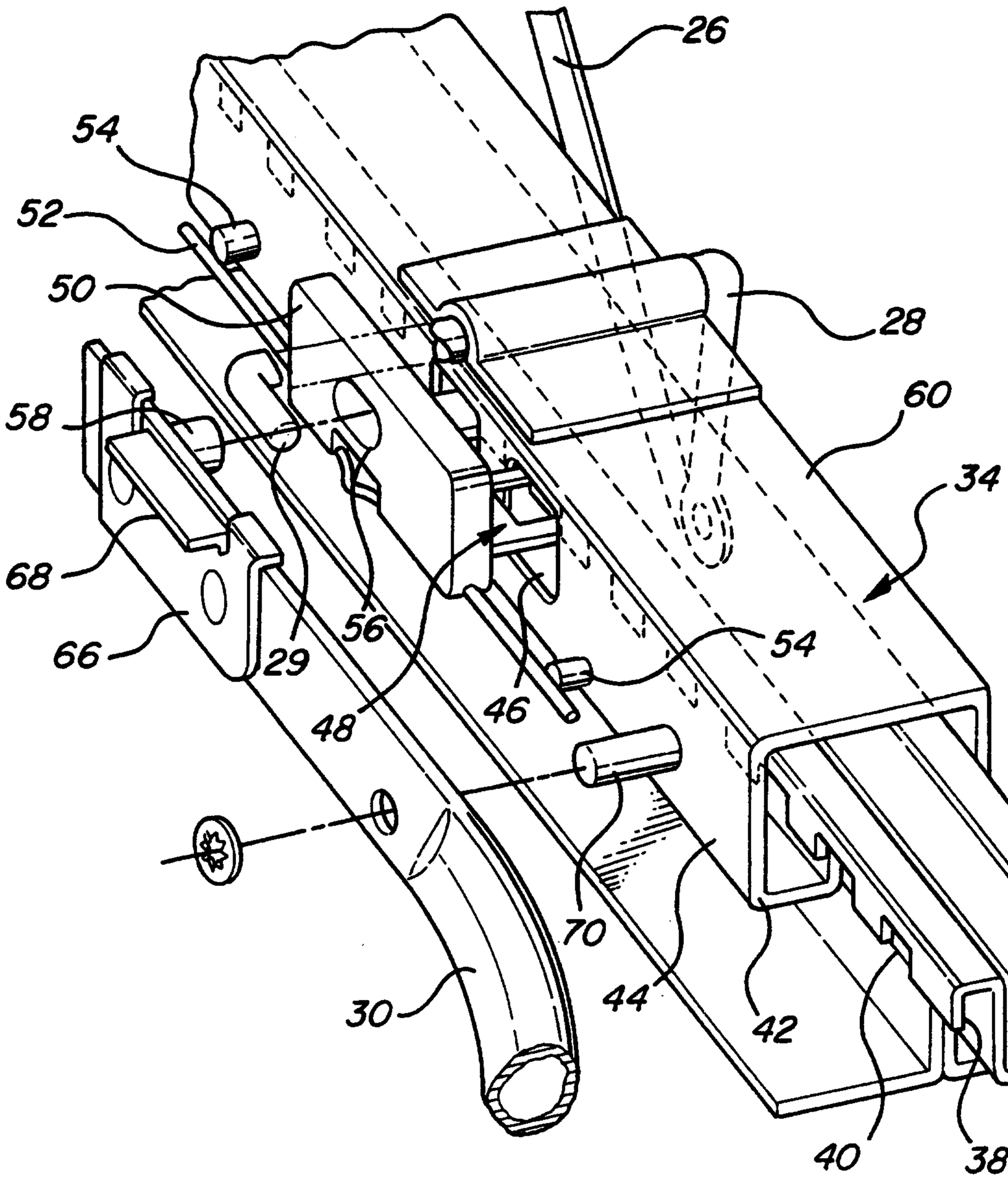


FIG-7

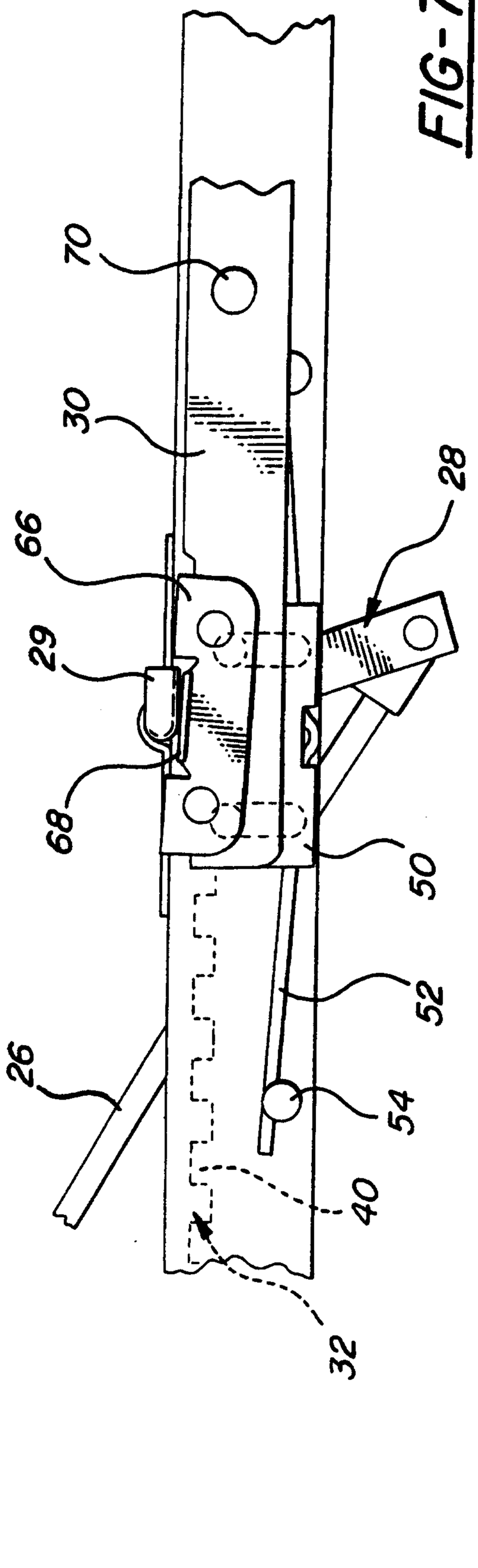
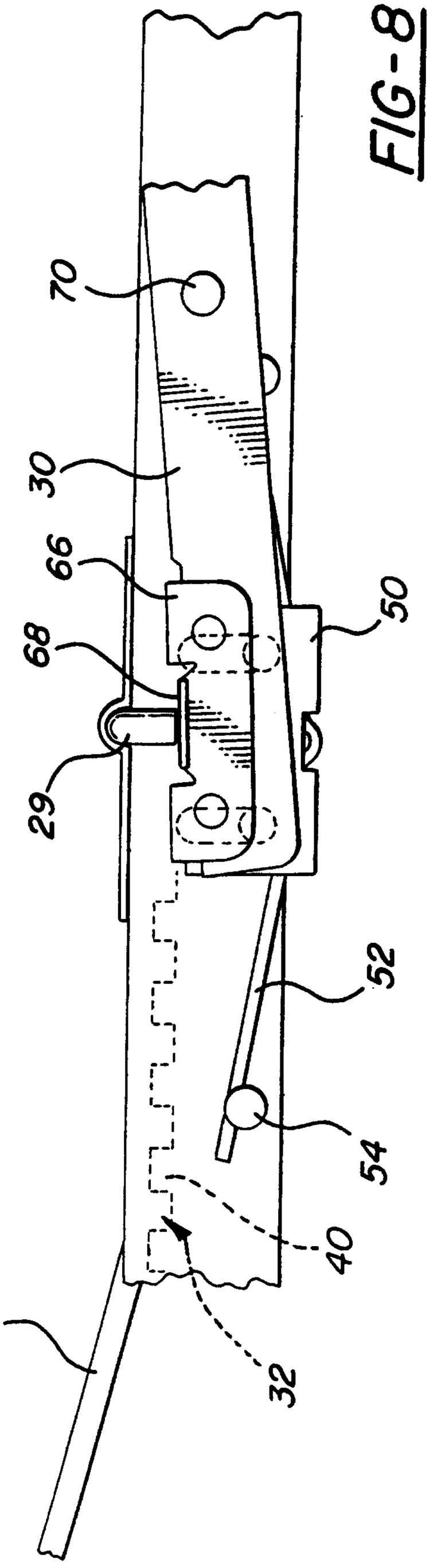


FIG-8



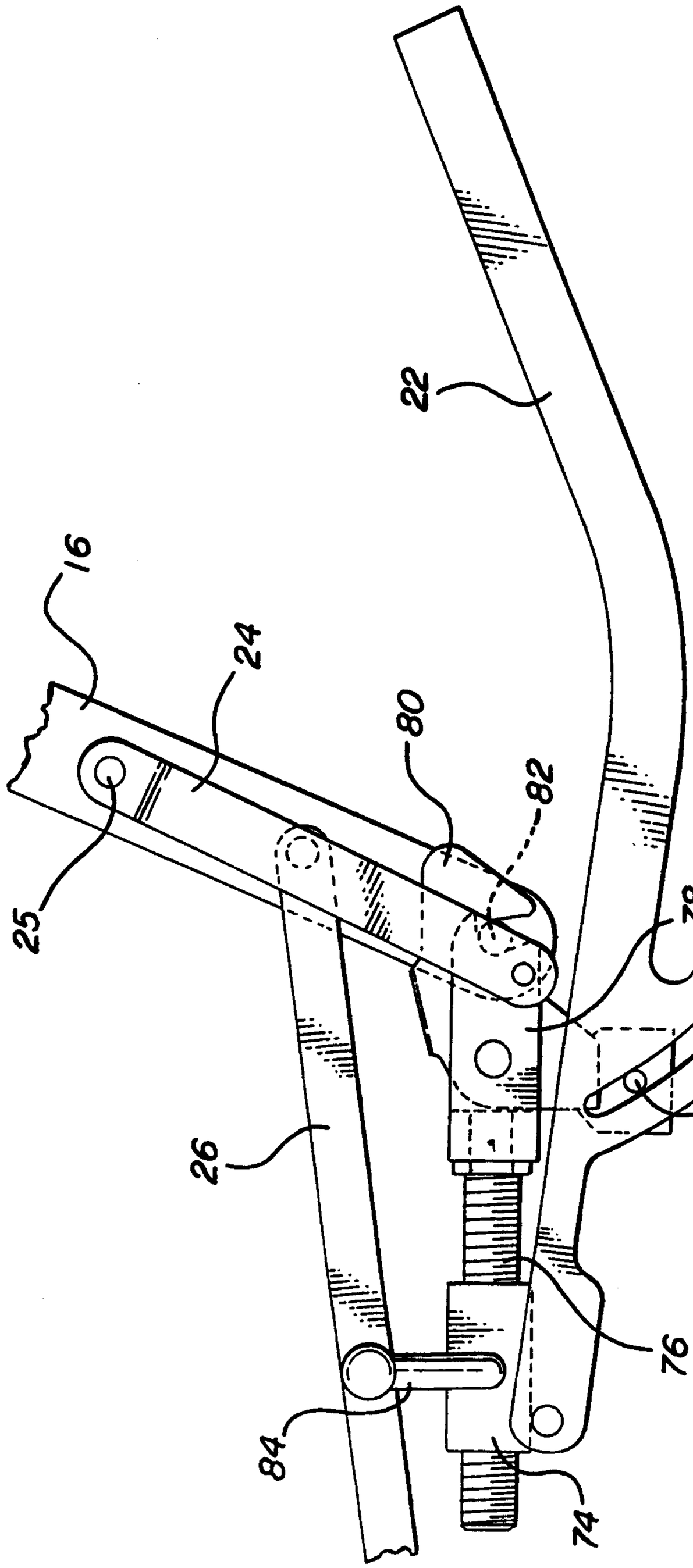


FIG-9

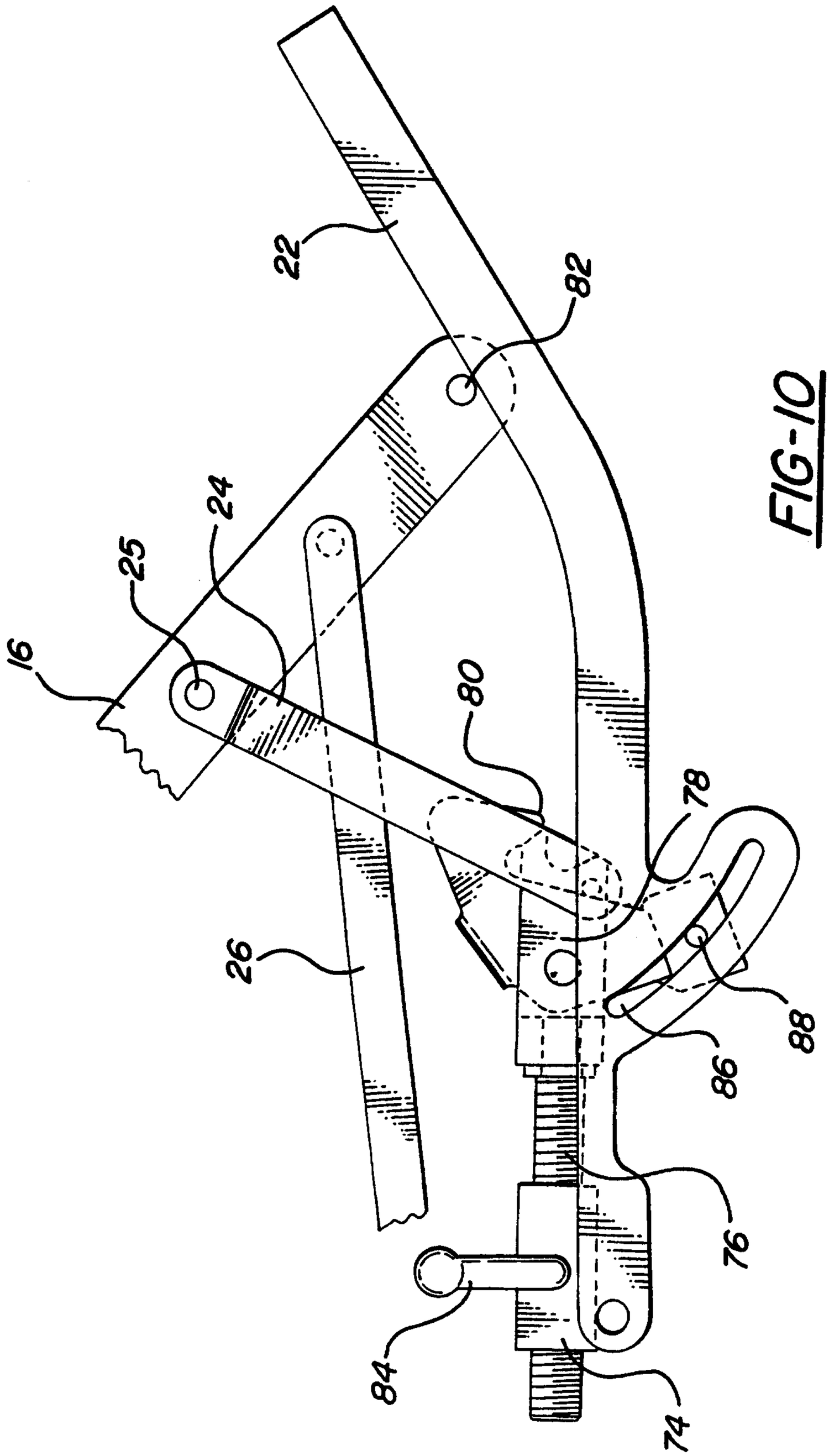
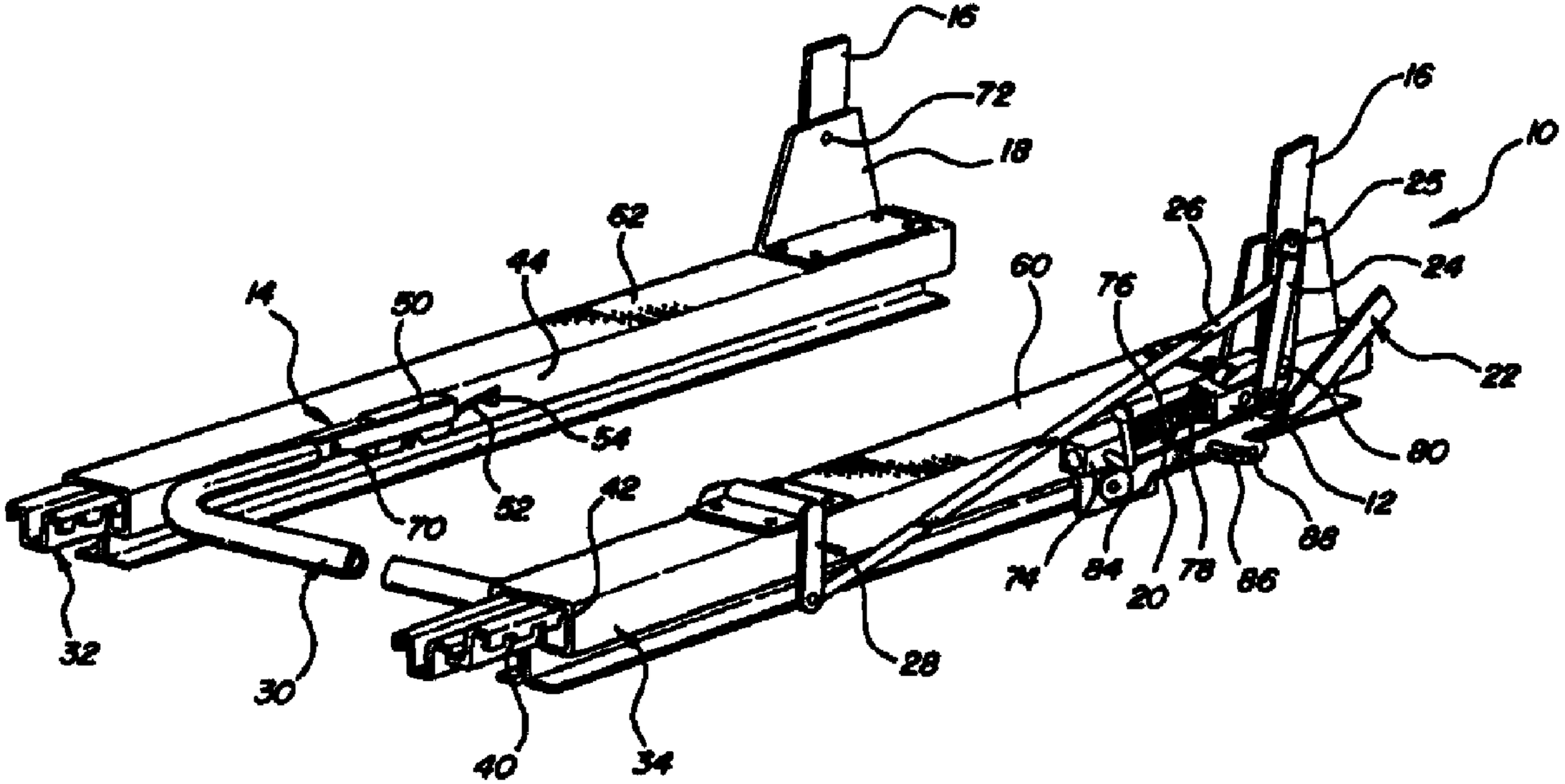


FIG-10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