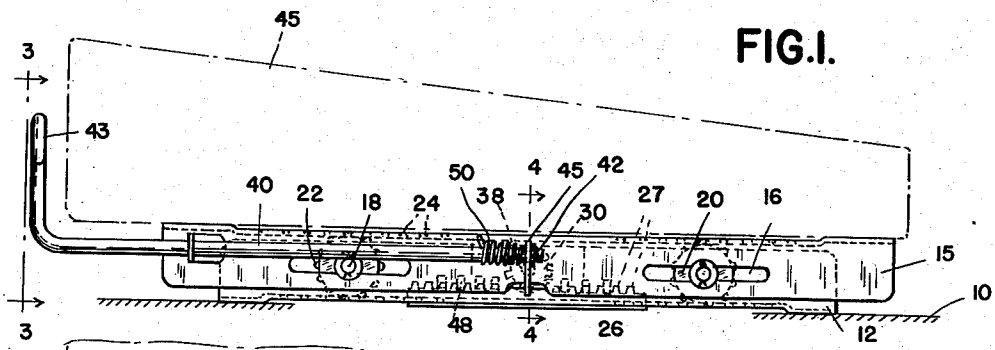
Dec. 14, 1937. W. S. SAUNDERS ET AL 2,102,226

SEAT SUPPORT

Filed Nov. 9, 1936

FIG.1.



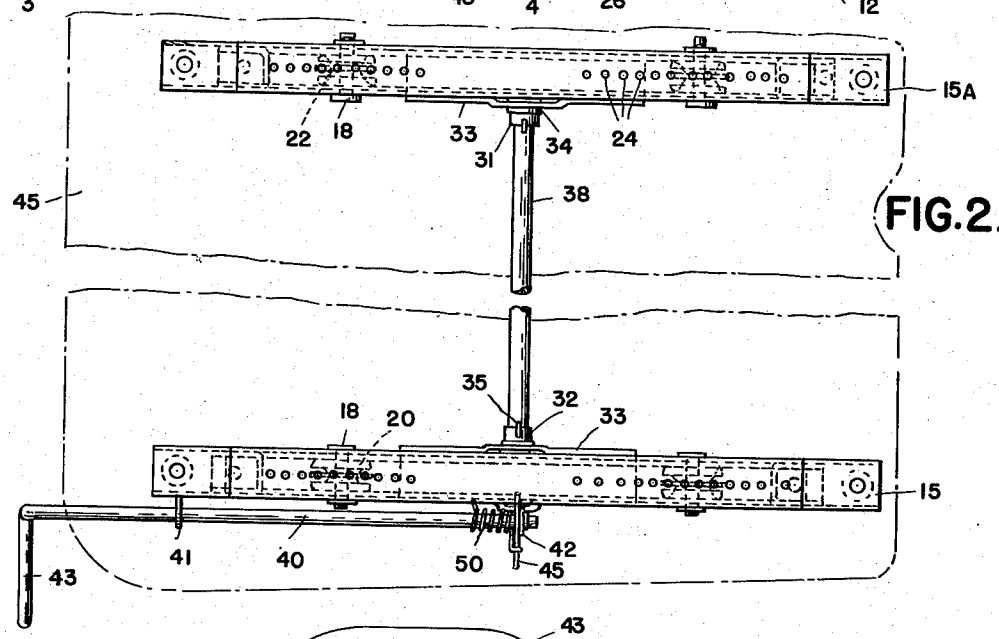


FIG.2.

FIG.3.

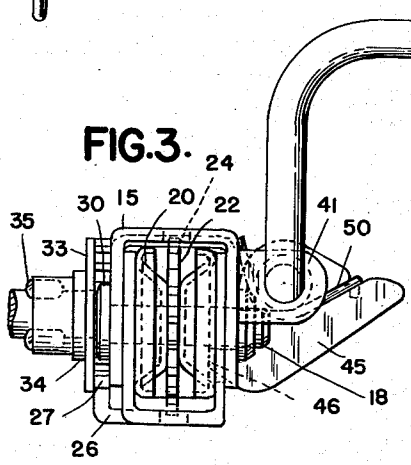
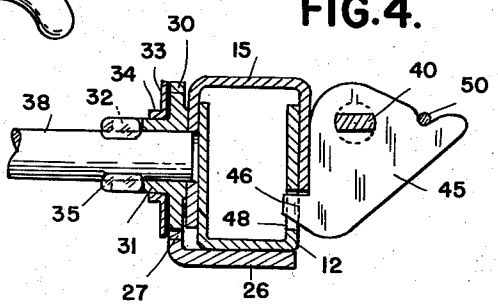


FIG.4.



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SEAT SUPPORT

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6 Claims. (Cl. 155—14)

This invention relates to adjustable supports for vehicle seats and the like, and is directed to the simplification and strengthening of such supports with a view to decreasing the expense of manufacture and increasing the reliability thereof.

An important object of the invention comprises the provision of an improved slidable seat-supporting construction formed as a complete assembly incorporating a base or track member and a carriage element slidable relatively thereto, together with means preventing separation of such elements and controlling the movement of the carriage with respect to the track, said elements being adapted to be used in pairs, in spaced relation to each other, beneath the seat, and being separately installable and removable.

A further object comprises the provision of seat supporting means of the character indicated including a pair of separate assemblies, and means connecting said assemblies and forcing the carriage element of each to move as a unit with and in parallel relation to the other, said connecting means also being separately installable, and adapted to be quickly and easily attached and permanently held in position when the assemblies are fastened in place.

Still another object comprises the provisions of improved track and carriage means for such assemblies, said means being of great rigidity, incorporating anti-friction elements promoting free rolling of the carriage over the track, and so arranged that the track and carriage members completely enclose and act as guards for the anti-friction elements, while the latter also act to brace the assembly.

A further object is the provision of an assembly of the character indicated in which the anti-friction elements are provided with axle pins projecting through both the track and carriage members and preventing separation thereof.

Other objects and advantages will be apparent from the following description wherein reference is made to the accompanying drawing illustrating a preferred embodiment of our invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawing:

Figure 1 is a side elevational view of a seat support incorporating the principles of this invention, the normal position of a seat assembly mounted thereupon being indicated in dotted lines.

Figure 2 is a plan view of such supporting means, showing two supporting assemblies connected by a cross shaft as ordinarily used, together with locking means carried by one assembly.

Figure 3 is a front view of such locking means and the assembly by which it is carried, taken as indicated by the line and arrows 3—3 of Figure 1.

Figure 4 is a detailed cross sectional view taken substantially on the line 4—4 of Figure 1 and looking in the direction of the arrows.

Referring now to the drawing, reference character 10 designates a supporting surface, which may for example be the floor of an automobile or other vehicle. To the floor near each end of the seat desired to be supported is directly secured a pair of track members 12, extending in the direction in which the seat is to travel. Each track member comprises an upwardly opening channel. Upon each such track element is arranged a carriage member, 15, comprising an inverted, downwardly opening channel member, also formed of sheet metal and having its webs far enough apart to outline the webs of the supporting track element. The webs of the track and carriage members overlap to a substantial extent, as best shown in Figures 3 and 4, and their overlapping portions are longitudinally slotted, as at 16, to accommodate the axle pins 18 of the roller elements, two of which are employed for each track and carriage assembly. The rollers comprise a pair of pressed metal members 20, dished and centrally spot-welded or otherwise secured together and to the interposed gear 22, the peripheries of the dished members 20 being flanged to provide an increased bearing surface, and the diameter thereof being sufficient to prevent contact between the track and carriage members except for such sliding engagement as may occur between their side webs.

Holes 24 are serially punched in the top and bottom of the carriage track elements, in such spacing and position as to mesh with the roller gears 22. The axle pins 18, being free to travel in the slots 16, which are formed both in the track and carriage members, act only to prevent separation of such members, and to limit the extent of travel of the carriage members, while the rollers are positively maintained in position by the gear and rack portions 22—24.

Beneath the track member 12 is secured a rack plate 26 having an edge bent upwardly along one side of the assembly, near the bottom and outside the same, which edge is provided with rack teeth, designated 27, with which the gear 30, journaled upon the outside of the carriage, meshes.

The gear 30 is supported in a sheet metal housing bracket 33, of double bent form, having its ends welded to the outer surface of one web of the carriage. The bracket 33 is provided with a bearing flange 34 surrounding an aperture therein and serving as a journal for the hub portion 31 of gear 30. Such hub portion is elongated to project from the bracket and slotted as at 32 for engagement with key portions 35 formed in-

tegrally with and projecting from the surface of the cross shaft 38; portions of the surface of the shaft being pressed to force the metal outward and form the key portions. The shaft and the key portions 35 may freely be slid into the hub of the gear and the slots 32 respectively, and the shaft preferably also extends into an aperture (undesignated) in the carriage 15, providing an extended bearing surface and support for the shaft.

It will be seen upon inspection of Figure 2 that the two complete assemblies provided are connected by the single cross shaft 38, which by forcing the gears 30 of both units to rotate together, assures parallel motion of both carriages and so of both ends of the seat carried thereby, preventing the seat from cocking due to traveling of one end faster or farther than the other.

From the outside web of one of the carriage as 15 a pair of tongues 41—42 are punched outwardly and pierced to provide bearing brackets for the latch operating rod 40, which extends therethrough in parallel relation to the carriage, and may project forwardly to a position conveniently accessible to an occupant of the seat (45), as near and below one front corner thereof, where it may carry a handle portion 43 by which the shaft 40 is adapted to be rocked. The end of shaft 40 which projects through bracket 42 is flattened to accommodate the squared opening of a latching dog 45, mounted upon the shaft for rotation therewith. The dog is provided with a nose portion 46 adapted to project through the carriage and into any one of a series of openings as 48 in the side of the track member, and by such engagement to hold the carriage and lock the same in position. A torsion spring 50 wrapped about the shaft and engaging the dog at one end urges the latter toward locked position, the other end of the spring being held by engagement with one side of the carriage member, as best shown in Figure 3.

It will be seen that when the handle is rotated to the left, as viewed in Figure 3, the dog is rocked to withdraw its nose 46 from engagement with the openings in the track, thereby allowing travel of the carriage, while when the handle is released and the dog projects into whichever opening may be nearest, it locks the track and carriage elements together, such locking effect being transmitted through the cross shaft and its geared connections to the other carriage member at the opposite end of the seat, such carriage being thereby similarly locked in the same relative position.

What we claim is:

1. Slidable supporting means for a seat or the like comprising a track channel having upwardly projecting flanges, a carriage element rollable over the track element and comprising a channel member inverted over the track element, said channels having their flanges overlapping and interfitted, opposed portions of channels being serially perforated, and guiding and anti-friction means arranged between said elements and housed within the space enclosed thereby, comprising rollers engageable with said top and bottom surfaces, gear portions movable with the rollers and meshing with said serial perforations, the overlapping webs of said element being longitudinally slotted in substantial alignment with the axes of said rollers, and axle members for said rollers projecting through said slots to prevent the separation of said elements and limit the travel of the carriage with respect to the track element.

2. Means for slidably supporting a seat or the like comprising a track channel having upstanding webs, a carriage channel inverted and overlying the track channel, the webs of one of said channels overlapping and being interfitted with respect to the webs of the other, anti-friction roller means between said channels and within the space enclosed thereby, said rollers having axle elements projecting through and adapted to travel in aligned slots in the overlapping webs of said channels.

3. In combination with means for slidably supporting a seat or the like, as defined in claim 2, locking means for releasably holding said carriage channel in any of a plurality of positions, comprising a dog rockably supported by the carriage channel and having a portion selectively engageable and disengageable with respect to any of a plurality of slots in one web of the track channel, by such rocking movement.

4. In combination with means for slidably supporting a seat or the like, as defined in claim 2, locking means for releasably holding said carriage channel in any of a plurality of positions with respect to said track channel, one of the webs of the carriage channel outlying the corresponding web of the track channel, comprising a rock shaft carried upon the outside of said web of the carriage channel and substantially parallel thereto, a dog connected to and movable by said rock shaft and having a portion selectively engageable and disengageable with respect to any of a plurality of abutment portions formed in said corresponding web of the track channel.

5. In combination with a pair of seat supporting assemblies, each constructed in the manner set forth in claim 2, said assemblies being adapted to cooperate in supporting the opposite ends of a seat or other supported object, a gear rotatably carried by one channel of each of said assemblies, a rack meshing with the gear carried by the other channel of each of said assemblies, said gears of the two assemblies being arranged in oppositely aligned relation, key portions carried by said gears, and a cross-shaft extending between said assemblies and engaging said key portions carried by the gears of said two assemblies, to force the carriage channels thereof to travel in desired relation to each other.

6. In combination with a pair of seat supporting assemblies, each constructed in the manner set forth in claim 2, said assemblies being adapted to cooperate in supporting opposite ends of a seat or the like, the webs of the carriage channel of each assembly outlying the webs of the track channel, means for connecting the carriage channels of said assemblies for unitary movement, comprising a gear rotatably supported upon the opposing web of each carriage channel, a rack fixed with respect to each track channel and meshing with the gear, and a cross-shaft connecting said gears and slidably keyed to each.

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