

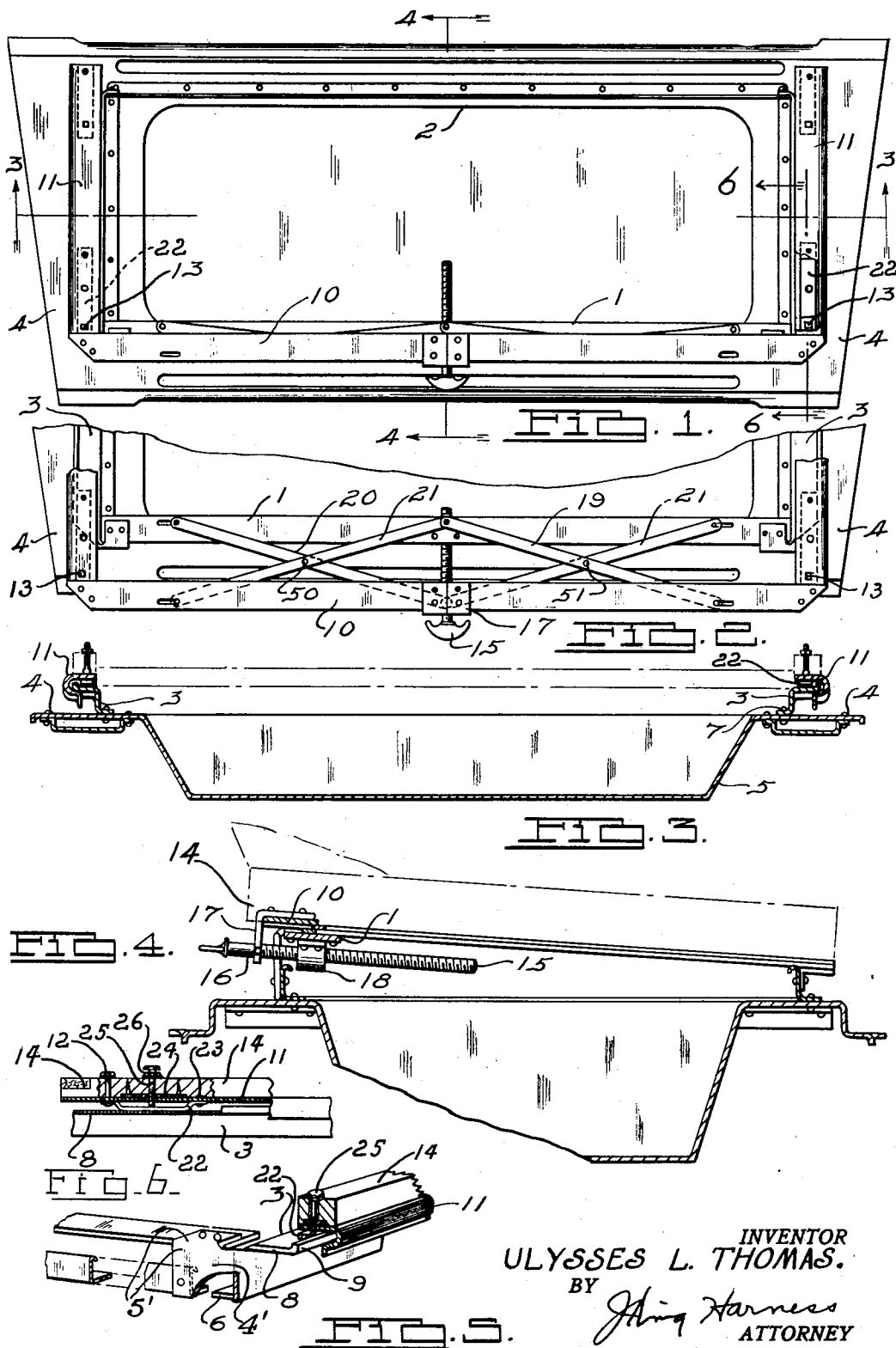
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ADJUSTABLE SEAT

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ADJUSTABLE SEAT

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The main objects of this invention are to provide an improved adjustable seat for vehicles; to provide improved means for uniformly extending and retracting all portions of a seat of this kind by applying suitable forces directly on the intermediate and end portions of the seat supporting structure; to provide improved supporting structure for slidably mounting vehicle seats of this kind, and to provide a supporting structure which may be conveniently adjusted so as to prevent free sidewise and rocking movement between the shiftable and stationary parts.

Heretofore, in adjustable seat structures, the stationary and shiftable parts of the structures have been urged apart and drawn together by applying suitably directed forces upon corresponding portions of the stationary and shiftable frames at their intermediate parts. Guiding mechanism of various kinds has been relied upon for preventing movements of one end of the shiftable frame in advance of the other end. Such guiding mechanism does not become operative until the movement of one end of the shiftable frame somewhat exceeds the movement of the other end, and as a result considerable freedom of movement has to be allowed between the stationary and shiftable members to prevent binding of the part.

The extending and retracting mechanism embodied in my invention is adapted to directly urge the intermediate and end portions of the shiftable frame relative to the intermediate and end portions respectively of the stationary part of the structure. With this construction, the operating mechanism serves as a guide and simultaneously applies direct forces on those parts of the shiftable member which are remote from its intermediate portions.

An illustrative embodiment of my invention is shown in the accompanying drawing, wherein:

Fig. 1 is a plan view of a seat support embodying my invention, showing the shiftable part in a retracted position.

Fig. 2 is a fragmentary plan view of the seat support showing the shiftable part in an extended position.

Fig. 3 is a longitudinal, vertical section taken on line 3—3 of Fig. 1.

Fig. 4 is a transverse, vertical section taken on line 4—4 of Fig. 1.

Fig. 5 is a fragmentary perspective view of a corner of the seat supporting structure.

Fig. 6 is a fragmentary vertical section taken on line 6—6 of Fig. 1.

In the form shown, a stationary frame consist-

ing of front and rear sides 1 and 2 each having an angle bar and end members 3 is rigidly mounted on a marginal flange 4 of a pan or tool box 5. The sides 1 and 2 comprise angle bars and the end members 3 are substantially Z shaped in cross section, having a bottom inwardly extending flange 6 which is secured to the pan by rivet 7, an upright web and an outwardly extending flange 8 having an upstanding edge 9. Formed on the respectively opposite ends of the end members 3 are brackets 4' which are integral with the webs thereof. These brackets have angularly disposed flanges 5' to which are secured the ends of the angle bars of the side members 1 and 2, and the ends of a front top plate 10' respectively. Slidably mounted on the outwardly extending flanges 8 of the end members 3 is a shiftable frame comprising a front side 10 and lateral ends 11. The lateral ends 11 are slidably mounted on the end members 3 of the stationary frame and are provided with a downwardly and inwardly formed bead which embraces the upstanding edge 9 of the upper flange 8.

Mounted on the lower side of each lateral end 11 of the shiftable frame is a pair of bowed shoes 22 which rest upon the flanges 8 of the ends 3 of the stationary support. The forward ends of the shoes 22 are secured to the shiftable frame by bolts 12 which extend through apertures 13 in the lateral ends 11 and the rear extremities of the shoes are riveted or otherwise fixed to the end members 11 at 23.

Rigidly secured to the shiftable frame by bolts 12, is a cushion frame 14 which comprises a metal plate 24 having a threaded aperture therein. A bolt 25 having a lock nut 26 on its upper end extends through the aperture of the plate 24 and through registering apertures in the cushion frame 14 and lateral end 11 of shiftable frame, and bears against the bowed shoe 22. The shiftable frame may be secured against sidewise and rocking movements relative to the stationary frame by screwing the bolt 25 inwardly against the shoe 22 so as to cause its intermediate portions to bear downwardly upon the end members 3 of the stationary frame. This action holds the beaded edges of the end members 11 of the shiftable frame firmly against the edges of the flanges 8 of the stationary frame as illustrated in Fig. 5.

The actuating mechanism for extending and retracting the shiftable seat support comprises a thumb bolt 15, having a part 16 of reduced diameter, which is journaled in a bracket 17 on the middle portion of the front side 10 of the shiftable frame. The thumb bolt extends rear-

wardly and is threaded in a nut 18 which is rigidly mounted on the plate 10' of the front side 1 of the stationary support. Rotation of the thumb bolt 15 directly urges the intermediate portion of the shiftable support relative to the corresponding part of the stationary support.

A pair of toggle members 19 and 20 are pivotally secured together at their adjacent ends, and slidably connected at their outer ends, with the front sides 1 and 10 of the stationary and slidable frames respectively. Each toggle member comprises a pair of links 21 pivotally secured together at their intermediate parts, as at 50 and 51, and extending diagonally between the front side 1 of the stationary frame and the front side 10 of the shiftable frame.

In operation, when the thumb bolt 15 is rotated to the left as viewed in Fig. 2, it urges the intermediate portions of the front sides 1 and 10 apart, and simultaneously spreads the adjacent ends of the toggle members. This spreading action causes the outer ends of the toggle members to be spread apart, thereby directly urging the end portions of the shiftable frame outwardly relative to the end portions of the stationary support. By rotating the thumb bolt 15 to the right as viewed in Fig. 2, the middle parts of the sides 1 and 10 and the adjacent ends of the toggle members are drawn together. This action causes the outer ends of the toggle links to be urged towards each other, and to directly force the end parts of the shiftable frame to a retracted position.

Although but one specific embodiment of this invention has herein been shown and described, it will be understood that various changes including the size, shape and arrangement of parts, may be made without departing from the spirit of my invention and it is not my intention to limit its scope other than by the terms of the appended claims.

I claim:

1. An adjustable seat for vehicles comprising a stationary support and a shiftable member, means on the intermediate portions of said stationary support and shiftable member respectively for urging said shiftable member transversely relative to said support, and a pair of scissors type of toggle members pivoted at their adjacent ends to the intermediate parts of said support and shiftable member, the outer extremities of the links of said toggle members being slidably secured to the end portions of said stationary support and shiftable member for directly urging the end portions of said shiftable member relative to the end portions of said support.

2. An adjustable seat for vehicles comprising a stationary support and a shiftable member, a nut on the intermediate portion of said support, a thumb bolt rotatably mounted on the intermediate portion of said shiftable member in registration with said nut, and a pair of scissors type of toggle members each including a pair of links pivoted together at their intermediate portions the adjacent ends of respectively

opposite links of each toggle member being pivoted together and to the intermediate parts of said support and shiftable member respectively, the outer extremities of the links of said toggle members being slidably secured to the end portions of said stationary support and shiftable member for directly urging the end portions of said shiftable member relative to the end portions of said support.

3. In an adjustable seat for vehicles; a stationary supporting structure comprising spaced longitudinal angle bars; end members connecting the extremities of said angle bars comprising an upright web, an inwardly extending lower flange and an outwardly extending upper flange; integral angle brackets on the extremities of said end members fixed to the ends of said angle bars; and a seat support shiftable mounted on the outwardly extending flanges of said end members.

4. In an adjustable seat for vehicles; a stationary supporting structure comprising spaced angle bars; end members connecting the extremities of said angle bars comprising an upright web, an inwardly extending lower flange and an outwardly extending upper flange; integral angle brackets on the extremities of said angle members fixed to the extremities of said angle bars; a shiftable seat support slidably mounted on said upper flanges comprising lateral members having beaded edges embracing the edges of said upper flanges; a shoe between said stationary support and said shiftable support, and means adjustably mounted on said shiftable support and coacting with said shoe for preventing said shiftable support from rocking relative to said stationary support.

5. An adjustable seat for vehicles comprising a stationary support and a shiftable member, flanges on the end edges of said shiftable member embracing the end edges of said stationary support, spaced shoes on the ends of said shiftable member having bearing surfaces seated upon said stationary support, and bolts adjustably mounted on said shiftable member and adapted to expand said shoes laterally for preventing said shiftable member from rocking relative to said stationary support.

6. An adjustable seat for vehicles comprising a stationary support and a shiftable member, flanges on the end edges of said shiftable member embracing the end edges of said stationary support, spaced shoes on the ends of said shiftable member having bearing surfaces seated upon said stationary support, bolts adjustably mounted on said shiftable member and adapted to expand said shoes laterally for preventing said shiftable member from rocking relative to said stationary support, and actuating mechanism for shifting said member relative to said stationary support comprising means for simultaneously urging the intermediate and end portions of said shiftable member relative to the intermediate and end portions respectively of said support.

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