

No. 754,642.

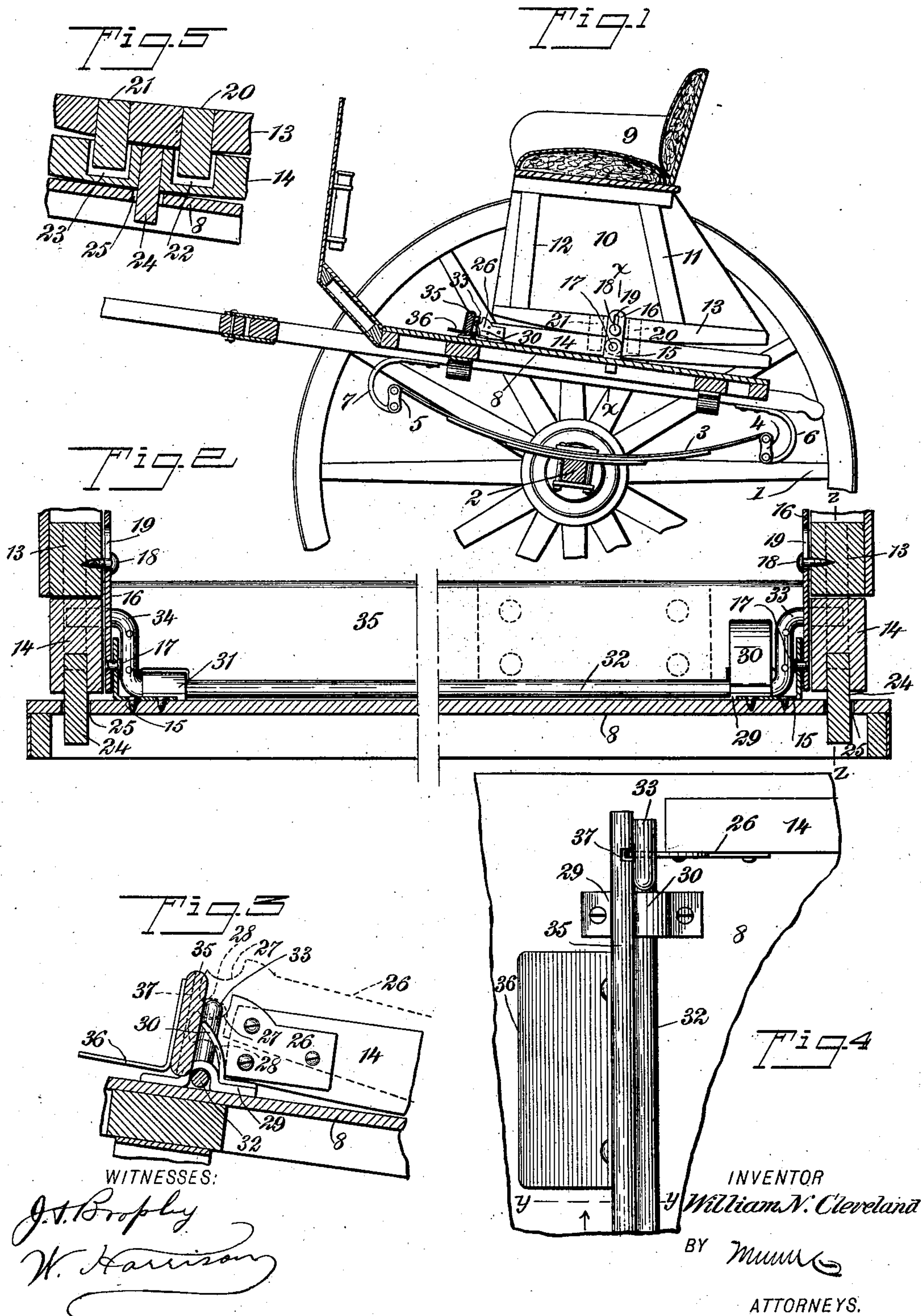
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W. N. CLEVELAND.

DEVICE FOR PREVENTING SHAFT MOTION IN VEHICLES.

APPLICATION FILED JUNE 6, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

WILLIAM N. CLEVELAND, OF DOVER, KENTUCKY.

DEVICE FOR PREVENTING SHAFT MOTION IN VEHICLES.

SPECIFICATION forming part of Letters Patent No. 754,642, dated March 15, 1904.

Application filed June 6, 1903. Serial No. 160,339. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. CLEVELAND, a citizen of the United States, and a resident of Dover, in the county of Mason and State of Kentucky, have invented new and useful Improvements in Devices for Preventing Shaft Motion in Vehicles, of which the following is a full, clear, and exact description.

My invention relates to vehicles, and more particularly to devices used thereon for preventing shaft motion due to the vertical movements of the horse.

My invention further relates to means whereby the seat of the vehicle may be inclined at slightly-different angles relatively to the vehicle-body, for the purpose of compensating grades over which the vehicle travels, thereby maintaining the seat substantially level.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through a vehicle on which my invention is employed. Fig. 2 is a vertical transverse section, somewhat enlarged, upon the line *xx* of Fig. 1. Fig. 3 is a fragmentary vertical section upon the line *yy* of Fig. 4. Fig. 4 is a fragmentary plan view of the forward right-hand corner of a vehicle-body equipped with my device, and Fig. 5 is a fragmentary section upon the line *zz* in Fig. 2.

The wheels 1 are mounted on the axle 2 in the usual manner. Supported upon the axle are springs 3, provided with links 4 5, and to these links are secured depending brackets 6 7, which are rigidly secured in the usual manner upon the vehicle-body 8. A seat 9, provided with arc-shaped boards 10 and supported by braces 11 12, is mounted upon rockers 13 13, these rockers in turn resting upon other rockers 14 14, which are provided with brackets 15 15. Links 16 are connected by pivots 17 17 with the brackets 15 15. Pins 18 18 are passed through the slots 19 19 in the links 16 16 and serve as guides for the rockers 13 13, whereby the same are normally free to rock within certain limits, but are unable to leave the rockers 14 14 to any appreciable

extent. The tongues 20 21, with which the rockers 13 13 are provided, project downward into the apertures 22 23, with which the lower rockers 14 14 are provided. The lower rockers are in turn provided with downwardly-projecting tongues 24 24, which loosely enter the apertures 25 25 in the vehicle-body 8.

Metallic heads 26 are rigidly secured upon the forward ends of the rockers 14 14 and are provided with arc-shaped bearings 27 28. Upon the right-hand side of the vehicle is a bearing 29, surmounted by a brace 30, as indicated more particularly in Fig. 3. The left-hand side of the vehicle is provided with a bearing 31, somewhat similar to the bearing 29. A rocking shaft 32, provided at its ends with cranks 33 34, is mounted within these bearings. A board 35 is rigidly secured to the cranks 33 34 and is free to move radially when said cranks are moved by the rocking of the shaft 32. In other words, the board 35 rocks, the shaft 32 and cranks 33 34 virtually acting as hinges therefor. A brace 36 is rigidly mounted upon the forward side of the board 35 and serves as a stop for limiting the forward motion of the board—that is to say, when the board 35 inclines forward the brace 36 is brought into engagement with the upper surface of the vehicle-body 8, thereby limiting the movement of the board.

The operation of my device is as follows: When the vehicle is drawn along a level road in the usual manner, the board 35 is thrown forward, so that the brace 36 is drawn into contact with the vehicle-body 8, this being the normal position of the board. The trotting of the horse causes the vehicle-body to sway in the usual manner, and this motion is compensated by the rockers 13 14, whereby the seat 9 is comparatively free from so-called "shaft motion." By having two pairs of rockers 13 13 14 14 the rocking motion is divided, as it were, and the effect upon the seat is greatly improved. Suppose now that the vehicle comes to the foot of a steep hill and proceeds to ascend the same. The rider upon reaching the foot of the hill rocks forward, so as to bring the forward ends of the rockers 14 into close proximity to the vehicle-body 8, and then by means of his foot causes the board

35 to tilt backward. The cranks 33 34, carried by the board 35, are thereupon brought into engagement with the bearing-surfaces 27 of the head 26, thus securely locking the
 5 rockers 14 14, so as to render them temporarily incapable of rocking movement. This causes the rockers 13 13 to rest upon a level which is independent of the level of the vehicle-body 8. In other words, the locking of
 10 the rockers 14 14 at the forward ends thereof tends to compensate for the inclination of the hill to be ascended. The rockers 13 13, however, are still free to compensate the so-called "shaft movements," for the reason that
 15 the rockers 13 13 and seat 9 are still free to rock upon the upper surfaces of the rockers 14 14. If now the vehicle comes to a descending grade, the rider by means of his foot releases the board 35 and rocks backward upon the seat
 20 9, thereby tilting the rockers 14 14 until the ends 26 rise a slight distance above the vehicle-body 8. Then by means of his foot he draws the board 35 into such a position that the cranks 33 34 will engage the bearing-sur-
 25 faces 28 of the heads 26, thereby temporarily securing the rockers 14 in the position indicated by dotted lines in Fig. 3. The rockers 13 13 are still free to move upon the rockers 14 14, thereby compensating the shaft motion,
 30 and subject to the desirable exception just mentioned are maintained comparatively level notwithstanding the grade.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

35 1. A device for preventing shaft motion in vehicles, comprising a seat provided with rockers, means for flexibly connecting said seat with the body of a vehicle, and mechanism for compensating the inclination of said seat relative
 40 to the general position of said body of said vehicle.

2. A device for preventing shaft motion in vehicles, comprising a seat provided with a plurality of superimposed rockers, and means

for flexibly connecting said seat and said rock- 45
 ers together and for flexibly securing the same upon the body of the vehicle.

3. A device for preventing shaft motion in vehicles, comprising a seat provided with a plurality of superimposed rockers, and means 50
 for flexibly connecting said seat and said rockers together and for flexibly securing the same upon a body of a vehicle, and a manually-operated fastening independent of said means 55
 for temporarily locking one of said rockers rigidly, relatively to said vehicle-body, so as to prevent rolling motion between said rocker and said vehicle-body.

4. A device for preventing shaft motion in vehicles, comprising a seat provided with a 60
 rocking device, and with means for changing the general inclination of said seat relatively to the vehicle-body, leaving said rocking device free to compensate shaft motion.

5. A device for preventing shaft motion in 65
 vehicles, comprising a seat to be used in connection with a vehicle-body, a plurality of rockers for preventing said seat from being affected by shaft motion, and means control-
 70 lable at will for changing the general relative position of said seat and said vehicle for the purpose of compensating the inclination of said vehicle-body due to passage of the same over inclined roads.

6. A device for preventing shaft motion in 75
 vehicles, comprising a seat provided with a rocking device and with locking mechanism connected with said rocking device and with the vehicle-body for the purpose of control-
 80 ling the general inclination of said seat relatively to said vehicle-body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM N. CLEVELAND.

Witnesses:

SAMUEL W. STAIRS,
 WM. MCKILLUP.