May 16, 1967 A. AUSTIN 3,319,271

CARRIAGE ROCKER

Filed Dec. 10, 1964 2 Sheets-Sheet 1

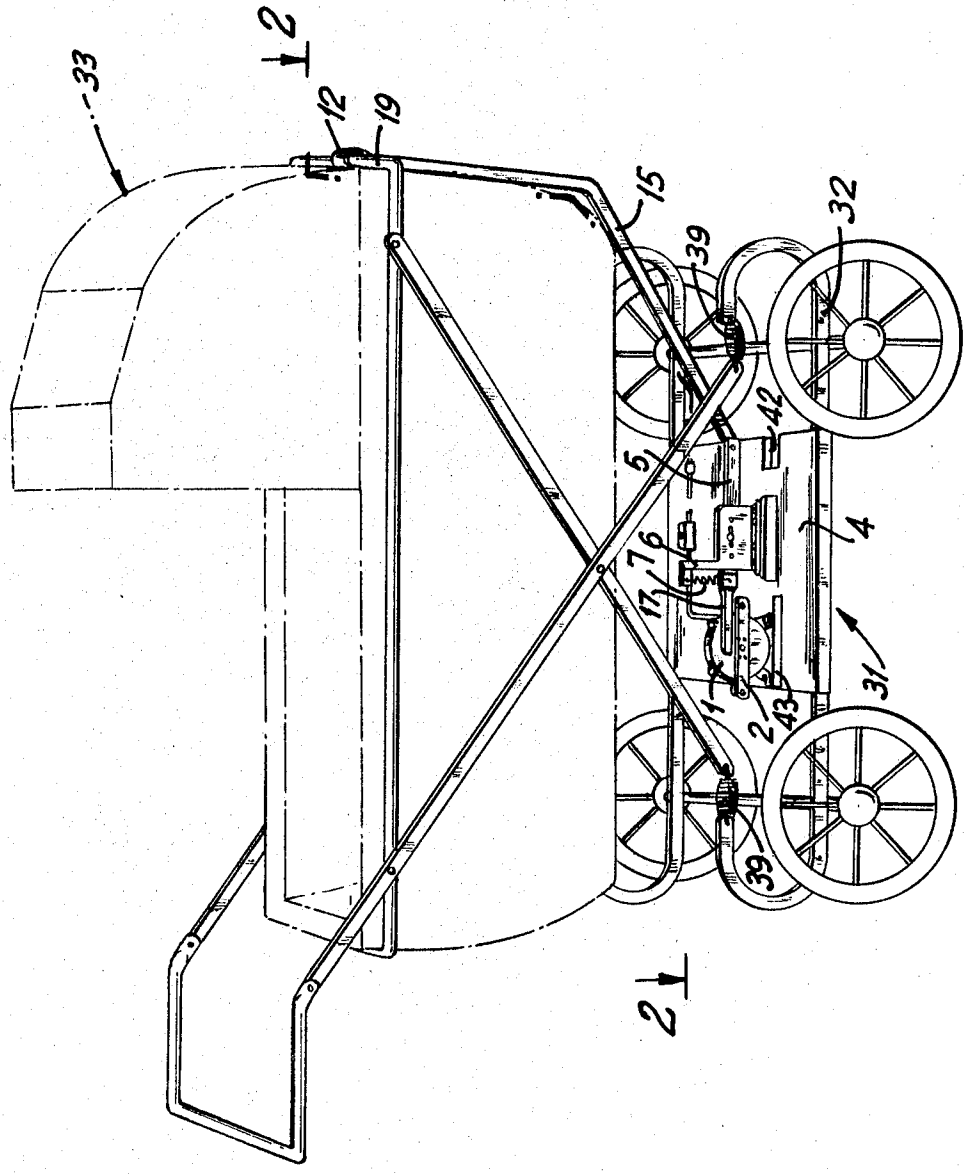


FIG. 1

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FIG. 2

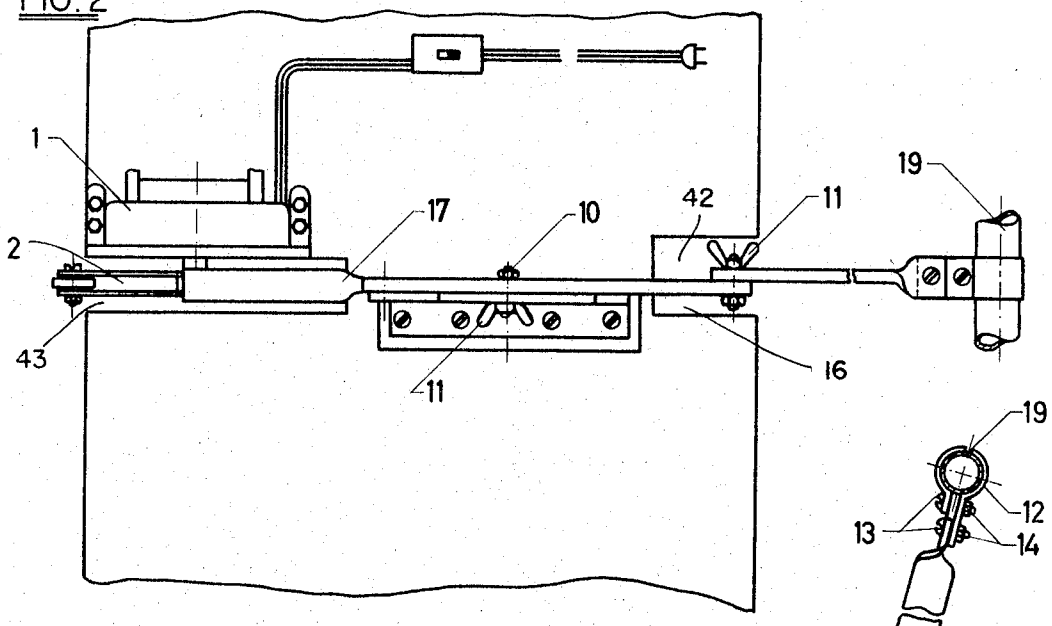


FIG. 3

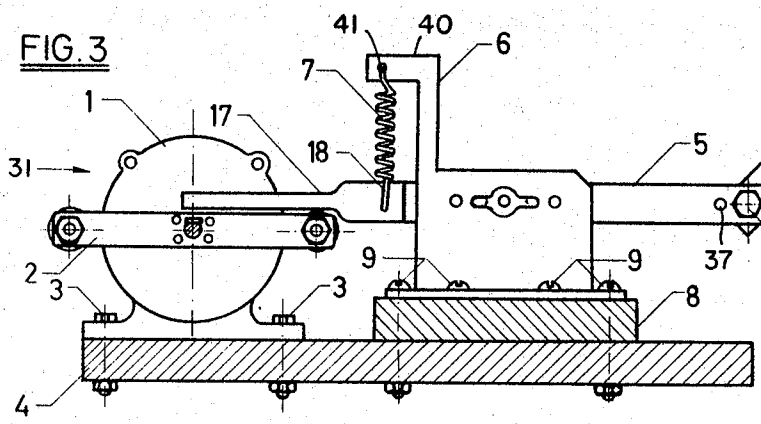


FIG. 4

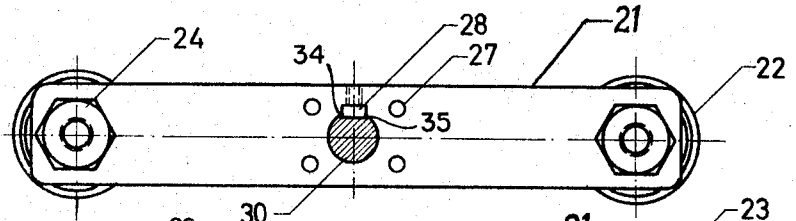
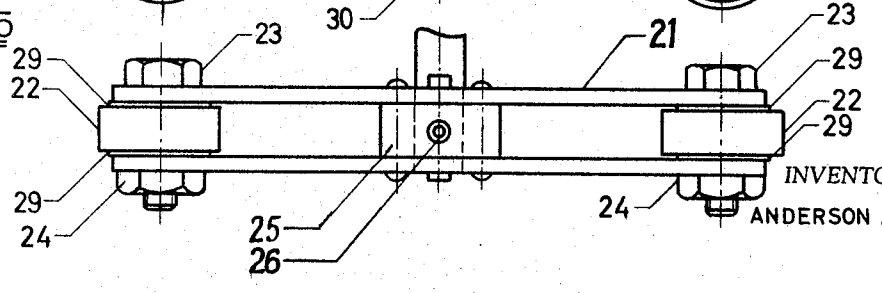


FIG. 5



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CARRIAGE ROCKER

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9 Claims. (Cl. 5—108)

The present invention relates to a carriage rocker readily adaptable for use with baby carriages, coaches and the like.

A rocking or see-saw motion has long been accepted a method for relaxing and/or soothing an infant. Most baby carriages or coaches are built in such a manner so as to provide for the physical actuation by an up and down pressure on the handle for rocking. While this has been found effective, it required the presence of a person for continued rocking and the rocking motion was uneven in that the upward and downward pressure on the handle was subject to constant fluctuation due to tiring or interruption to the person rocking the carriage.

This manual actuation also requires the constant attention by the operator. According to the present invention, there is provided a carriage rocker electrically actuated which is readily adaptable for use with a standard carriage or coach and which is so designed as to impart a smooth see-saw or up and down motion to the carriage.

The carriage rocker of the present invention is adapted to be secured to the lower carriage frame of a carriage or coach free from interference with the wheel or brake mechanism of the carriage and by the mechanical actuation of an angle or rocker arm provide a smooth even rocking motion to the carriage body.

Although such novel feature or features believed to be characteristic of the invention are pointed out in the claims, the invention and the manner in which it may be carried out may be further understood by reference to the description following and the accompanying drawings.

FIGURE 1 is a view in perspective of a carriage with a carriage rocker constructed in accordance with the present invention.

FIGURE 2 is a sectional view taken on lines 2—2 of FIGURE 1.

FIGURE 3 is an enlarged detail view of a carriage rocker constructed in accordance with the present invention.

FIGURE 4 is an enlarged side view of the lifter of the present invention.

FIGURE 5 is an enlarged top view of the lifter of FIGURE 4.

Referring to the drawings in detail where like numerals denote like parts.

The carriage rocker 31 of the present invention consists of a motor 1, preferably electrically actuated mounted on the lower frame or axle 32 of a carriage or coach 33, a lifter 2 secured to the motor 1 and adapted to be rotatably actuated by the motor 1 and an adjustable lever 5 pivotally mounted and adapted to transmit the force of the motor actuated lifter 2 to an angle or rocker arm 15.

The motor 1 supplies the power for the carriage rocker 31, and it has been found that a continuous duty fractional horsepower gear head electric motor is readily suitable. The motor 1 is attached to a base board 4 by conventional means such as bolts 3. The motor 1 includes a motor shaft 30 to which is attached the lifter 2.

The lifter 2 consists of two rectangular members or

arms 21 separated by a centrally located spacer block 25 and is provided with rollers or ball bearings 22 at each end. An opening 34 is provided substantially centrally disposed through the arms 21 and the spacer block 25 adapted to receive the shaft 30 of the motor 1. To maintain the lifter 2 firmly on the shaft 30, a key way 35 is formed on the top of the opening 34 and shaft 30 adapted to accommodate a key 28 fitted into the key way 35 and opening in the shaft 30. Further support may be provided by having a small opening 36 vertically positioned in the spacer block 25 above and extending into the key way 35 adapted to receive a screw 26. The arms 21 may be affixed to the spacer block 25 by rivets 27 as shown in FIGURE 4.

The rollers or ball bearings 22 are rotatably affixed between the arms 21 at each end by conventional means such as through the use of machine bolts 23 passing through the arms 21, washers 29, rollers 22 and secured by a machine nut 24 as shown in FIGURE 5.

The rollers 22 are so positioned that their outer races are free to rotate. It has been found that by rounding the ends of the arms 21 so as not to protrude above the outer race of the rollers 22 the friction between the rollers 22 and the adjustable lever 5 can be minimized further. By providing rollers 22 of the shielded variety, dirt is substantially prevented from entering into the bearings and hampering the operation of the rollers 22.

In normal position, the lifter 2 is positioned horizontally to the base board 4 and end of the adjustable lever 5 rests on the race of a roller 22, the adjustable lever 5 generally spanning one-half of the length of the lifter 2.

The adjustable lever 5 is of a general rectangular shape and is pivotally mounted on a bracket 6. It has been found that a combination machine bolt 10 and wing nut 11 arrangement is satisfactory. By twisting the end of the lever 5 which extends over one-half of the lifter 2 ninety degrees thereby providing a greater flat surface in contact with the race of the rollers 22, greater efficiency is afforded since a wider bearing surface is provided.

Similarly by providing a flexible covering on sleeve 17 such as plastic, neoprene, rubber or the like over the lever 5 from its end above the lifter 2 to a point beyond the ninety degree bending, a cushioning effect is provided which serves to soften the impact of the lifter 2 against the lever 5 when in operation. The sleeve 17 can be secured to the lever 5 by conventional means such as the split pin 18 shown in FIGURE 3.

At the opposite end of the lever 5, there is provided means for affixation of the angle or rocker arm 15. While the angle or rocker arm 15 may be affixed according to conventional means, it is found that by providing a series of openings 37 on the lever 5 disposed through the vertical side of the lever 5, adjustment by selecting positioning of the angle arm 15 on the lever 5 makes the device of the present invention readily suitable for carriages of varying dimensions. Similarly a series of openings 38 can be provided on the angle arm 15 for the same purpose. The lever 5 and the angle arm 15 once selectively positioned as aforementioned are affixed such as by a conventional bolt 16 as shown in FIGURE 3 or a wing nut 11 as shown in FIGURE 2.

The rocker or angle arm 15 serves to link the lever 5 to the upper carriage frame 19, the angle arm 15 being affixed to the upper carriage frame 19 by means such as the clamp means 12 shown in FIGURE 3.

The angle arm 15 can be bent so as to conform with the shape and size of the carriage 33. The clamp can be adjusted according to the varying dimensions of the upper carriage frame 19 by conventional means such as the screw 13 and nut 14 arrangement shown in FIGURE 3.

In operation, the motor 1 is actuated turning the shaft 30 counterclockwise, thus rotating the lifter 2. The roller 22 rides along the end of the lever 5 pivoting the lever 5 upward. The angle arm 15 is pulled downward causing the upper carriage frame 19 to tip downward. Since the upper carriage frame 19 is constructed so as to be linked with the lower frame 32 by springs 39 so as to maintain a horizontal equilibrium, the upper carriage frame 19 will once the lever 5 is released from the upward pressure caused by the lifter 2 return to a horizontal position. This continued cycle will cause an even see-saw or rocking motion of the upper carriage frame 19.

It has been found that upon completion of one-half cycle, there is a possibility that the downward motion of the lever 5 when the roller 22 moves from under it will be too great and will hamper the smooth operation of the carriage rocker 31. To prevent this, the bracket 6 as shown in FIGURE 3, has been so constructed as to allow for the use of a dampening spring 7. As shown in FIGURE 3, the lever bracket 6 is so positioned that its vertical edge is parallel to the sides of the lever 5. The lever 5 is pivotally mounted thereon by a machine bolt 10 or the like. An arm 40 is formed on the upper part of the bracket 6 horizontal to the base board 4 and high enough above the lever 5 so as not to interfere with the lever's 5 motion when the lever 5 is at its maximum lift position.

A dampening spring 7 is connected by conventional means to the bracket arm 40 and depends vertically to the lever 5 and is affixed thereto. The dampening spring 7 is so constructed that it is under tension when the lever 5 is in normal horizontal position. When the roller 22 moves from under the lever 5, the dampening spring 7 retards the downward motion of the lever 5. The dampening spring 7 also aids in lifting the lever 5 and thereby reduces the power required from the motor 1. At the maximum lift of the lever 5, the dampening spring 7 is compressed and does not interfere with the motion of the lever 5.

In order to insure the proper positioning of all parts, the carriage rocker of present invention can be provided with an integral or mechanically affixed base board 4 and can then be secured by conventional means to the lower carriage frame 32. The base board can be of a general rectangular configuration with a cut-out area 42 and 43 under the lifter 2 and ends of the lever 5 so as not to interfere with operation of the carriage rocker.

The base board 4 in the preferred embodiment as shown in FIGURE 1, rests upon the lower frame 32 of the carriage and is so located as not to interfere with the brake mechanism (not shown) of the carriage.

While as shown in FIGURE 2, an electric motor utilizing an electric cord can be used, the carriage rocker of the present invention is adaptable for use with a battery powered motor or the like.

Although the terms and expressions which are employed are used as terms of description; it is recognized, though that various modifications are possible within the scope of the invention claimed.

Having thus described certain forms of the invention in some detail, what is claimed is:

1. A baby carriage rocking device comprising a motor having a rotatable shaft, a lifter secured to said rotatable shaft, a pivotally mounted lever, the first end portion of said lever pivoted upward upon actuation by said lifter, said lever returned to normal position upon passage of said lifter, the second end portion of said lever adapted to be affixed to a rocker arm, and said rocker arm adapted to be affixed to the upper frame of a carriage, whereby said upper frame is moved in a substantially upward and downward motion as the lifter pivots and releases said lever.

2. A baby carriage rocking device comprising a motor having a rotatable shaft, a substantially rectangular lifter centrally secured to said rotatable shaft, said lifter having rollers on either end thereof, a pivotally mounted lever, the first end portion of said lever pivoted upward along the race of said rollers upon actuation by said lifter, said lever returned to normal position upon passage of said lifter, the second end portion of said lever adapted to be affixed to a rocker arm, and said rocker arm adapted to be affixed to the upper frame of a carriage whereby said upper frame is moved in a substantially upward and downward motion as the lifter pivots and releases said lever.

3. A baby carriage rocking device comprising a motor having rotatable shaft, a substantially rectangular lifter centrally secured to said rotatable shaft, said lifter having rollers on either end thereof, a lever pivotally mounted in a bracket, a bracket arm on the upper portion of said bracket extending horizontally over the first end portion of said lever, spring means depending from said arm and affixed to said first end portion, said first end portion pivoted upward along the race of said rollers upon actuation by said lifter, said lever retarding the downward motion of said first end portion, the second end portion of said lever adapted to be affixed to a rocker arm, and said rocker arm adapted to be affixed to the upper frame of a carriage whereby said upper frame is moved in a substantially upward and downward motion as the lifter pivots and releases said lever.

4. A carriage rocking device as described in claim 3 wherein said first end portion of said lever includes a plastic or shock absorbing cover.

5. A carriage rocking device as described in claim 3 wherein said second end portion of said lever includes a series of spaced apart openings for adjustable mounting the rocker arm.

6. A carriage rocking device as described in claim 3 wherein the ends of said lifter are rounded whereby the races of said rollers protrude above the surface of said ends.

7. A carriage rocking device as described in claim 3 wherein said first end portion of said lever is twisted 90° to provide greater surface contact with said rollers.

8. A baby carriage rocking device comprising a base adapted to be affixed to the lower frame of said carriage, a motor on said base having rotatable shaft, a substantially rectangular lifter centrally secured to said rotatable shaft, said lifter having rollers on either end thereof, a lever pivotally mounted on said base the first end portion of said lever pivoted upward along the race of said rollers upon actuation by said lifter, said lever returned to normal position upon passage of said lifter, the second end portion of said lever adapted to be affixed to a rocker arm, openings in said base substantially below said lifter and said first and second end portions, said rocker arm adapted to be affixed to the upper frame of a carriage whereby said upper frame is moved in a substantially upward and downward motion as the lifter pivots and releases said lever.

9. A baby carriage rocking device comprising, a base adapted to be affixed to the lower frame of said carriage, a motor on said base having a rotatable shaft, a substantially rectangular lifter centrally secured to said rotatable shaft, said lifter having rollers on either end thereof, a lever pivotally mounted in a bracket, a bracket arm on the upper portion of said bracket extending horizontally over the first end portion of said lever, spring means depending from said arm and affixed to said first end portion, said bracket affixed to said base, said first end portion of said lever pivoted upward along the race of said rollers upon actuation by said lifter, said lever returned to normal position upon passage of said lifter, said spring re-

tarding the downward motion of said first end portion, the second end portion of said lever adapted to be affixed to a rocker arm, said rocker arm adapted to be affixed to the upper frame of a carriage whereby said upper frame is moved in a substantially upward and downward motion as the lifter pivots and releases said lever.

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