July 8, 1969 Y. CALVIN ETAL 3,453,668

ROCKING MECHANISM

Filed Jan. 11, 1965

FIG. 1.

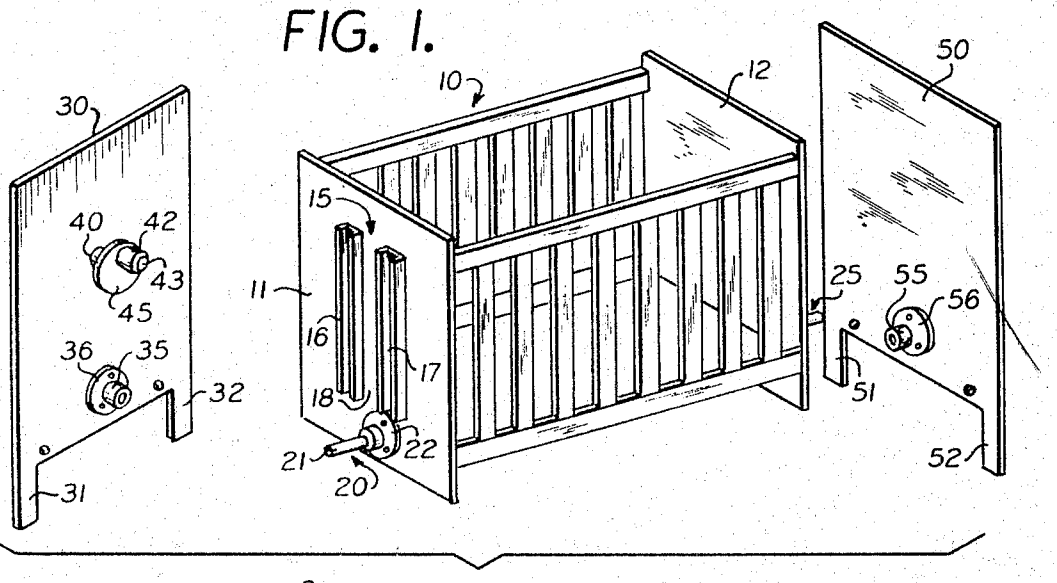
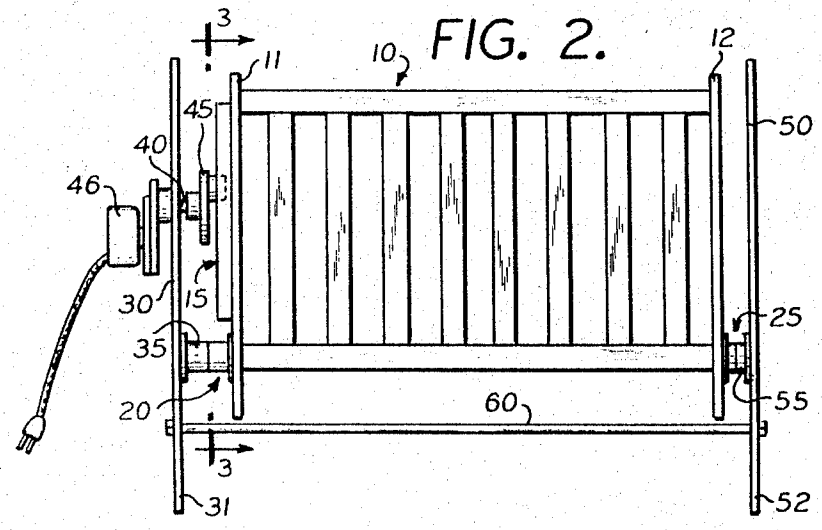


FIG. 2.



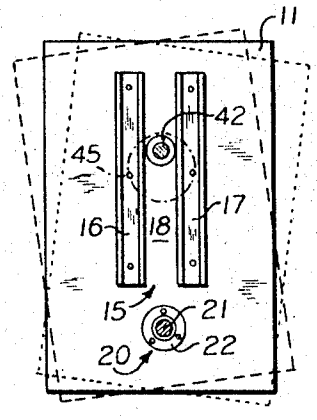


FIG. 3.

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ROCKING MECHANISM

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U.S. Cl. 5—109 1 Claim

ABSTRACT OF THE DISCLOSURE

A rocking mechanism for a crib, or the like, having a motor driven cam plate on which a cam roller is eccentrically mounted to ride in a trackway formed by spaced channel members arranged on a crib endwall, said mechanism formed of relatively stock flanged bushings, rollers and channel members.

This invention relates to the art of rocking mechanisms, more particularly to an improved rocking mechanism adapted for use in connection with cradles, cribs, beds or the like.

A variety of situations exist in which it is desired to impart a rocking motion to a member. Thus in connection with cradles or cribs, it is often found desirable to impart a rocking motion to the cradle or crib so as to soothe the occupant and provide the desired lulling action generally found conducive to sleep. To this end, a variety of structures have in the past been evolved designed to provide the desired rocking motion to a bed or crib. Such previously evolved structures have however been relatively complex and costly, thus mitigating against their use in connection with cradles or cribs. Additionally, previously evolved structures have been such as to require factory assembly, and therefore preventing the use of these rocking mechanisms with existing cribs, beds, cradles, or the like members to be rocked.

It is with the above problems and desiderata in mind, that the present improved rocking mechanism has been evolved, a rocking mechanism of relatively simple nature, requiring minimum maintenance, and lending itself to installation in connection with a bed or crib by a user so that the rocking mechanism per se may be sold as a kit apart from the cradle or crib structure.

It is accordingly among the primary objects of this invention to provide an improved rocking or oscillating mechanism of a simple nature subject to installation by a user in connection with any structure which it is desired to rock such a cradle or crib.

A further object of the invention is to provide improved means for mounting a cradle for desired oscillation or rocking without requiring special production or assembly tools.

It is also an object of the invention to provide a simple rocking mechanism subject to being distributed in kit form for installation by user in connection with a cradle, crib, bed, or the like objects which it is desired to mount for rocking motion.

These and other objects of the invention which will become hereafter apparent are achieved by pivotally supporting the member to be rocked. This may be accomplished by providing a pair of pivot journals adapted for securement to opposed side walls of the member to be rocked such as a cradle or crib. Additionally a trackway is formed on one of the walls. This trackway is preferably formed by a track assembly adapted for securement to one of the walls of said member to be rocked. A mounting board is provided with a bearing member positioned on the mounting board for engagement with one of the aforementioned pivot journals. The bearing member is

located at a point on the mounting board at a height above the bottom of the mounting board greater than the distance between the pivot journal and the lowest point of the member to be rocked to provide necessary rocking clearance. On the mounting board a cam member is provided for rotation in the trackway. This cam member is formed by a rotatable shaft arranged with a roller secured eccentrically with respect to the rotatable shaft. This eccentrically mounted roller is dimensioned to ride on the track assembly. A motor supported on the mounting board is coupled to the shaft to drive same. A support wall similar in shape to the mounting board and having a support wall bearing is provided for arrangement at the opposite side of the member to be rocked with the support wall bearing dimensioned to accommodate the opposed pivot journal. In use energization of the motor causes the eccentrically mounted roller to move in the trackway between the tracks imparting desired rocking motion to the member to be rocked.

A feature of the invention resides in the fact that the components of the rocking mechanism lend themselves to being sold in kit form independently of the member to be rocked, permitting installation of the rocking mechanism in conjunction with an existing member to be rocked such as a cradle or crib.

A further feature of the invention resides in the fact that the components may readily be assembled without the use of specialized tools or mechanical skills so that the rocking mechanism may be incorporated by anyone in connection with a cradle or crib.

The specific details of a preferred embodiment of the invention, and their mode of functioning, will be made most manifest and particularly pointed out in the clear, concise, and exact terms in conjunction with the accompanying drawing wherein:

FIG. 1 is an exploded perspective view of a crib to which the improved rocking mechanism of the invention is applied; and

FIG. 2 is a side elevational view of a crib such as shown in FIG. 1 with the rocking mechanism applied thereto; and

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 2 indicating the rocking motion imparted to the crib.

Referring now more particularly to the drawings, like numerals in the various figures will be taken to designate like parts.

As seen in the drawings, the member to be rocked is illustratively shown as a crib **10** having opposed end walls **11** and **12**. The crib **10** shown illustratively, as will be understood by those skilled in the art, is merely shown by way of example as indicating the type of members to which the instant invention may be applied to impart desired rocking motion to the members.

On end wall **11** of the illustratively shown crib **10**, a track assembly **15** is arranged. The track assembly **15** in the illustrated embodiment is preferably formed by the utilization of two channel shaped elements **16** and **17**, U-shaped in cross-section. These channel shaped elements are formed of conventionally available stock, and may be made in any one of a variety of other shapes within the scope of the invention. The only requirement of the elements **16** and **17** is that they be provided with side walls so that when the elements **16** and **17** are arranged on the end wall **11** a member to be rocked the side walls serve to define a trackway **18** therebetween.

A pivot journal assembly **20** is formed by securing a journal pin **21** in a flanged collar **22** with the flange of collar **22** adapted for securement to the end wall **11** of the crib or other member to be rocked.

A substantially similar pivot journal assembly **25** is

provided for arrangement on the opposed end wall **12** of the cradle **10** as seen to the right in FIGS. 1 and 2.

As best seen to the left in FIGS. 1 and 2, a mounting board **30** is provided, which as illustrated, is preferably contoured to overlie the end wall **11** of the member to be rocked such as cradle **10**. In the illustrated embodiment, the mounting board is shaped so as to provide legs **31** and **32** which extend down below the bottom of end wall **11**. In the illustrated embodiment, the end wall **11** of crib **10** is shown without leg members such as are conventionally present. It will be understood by those skilled in the art that these conventionally present leg members may either be removed at the time of installation of the rocking mechanism of this invention, or if it is desired to retain the generally available leg members, then the leg members **31** and **32** on the mounting board are made slightly longer than the leg members of the crib **10**. A bearing bushing **35**, preferably formed with a flange **36** to implement securement of the bearing **35** to mounting board **30** is provided. Bearing **35** is dimensioned to accommodate journal pin **21**. Bearing **35** is arranged on the mounting board **30** so as to support the crib **10** at a distance above the floor or like datum so as to permit rocking of the crib **10**, as will be apparent to those skilled in the art.

Arranged on the mounting board at a point spaced from bearing **35** is a rotatable shaft **40** suitably bearing in the mounting board. A cam member in the form of roller **42** is eccentrically positioned with respect to shaft **40**. The eccentric positioning of cam roller **42** is obtained in the illustrated embodiment of the invention by a mounting roller **42** on stud **43** supported on plate **45**, as best seen in FIG. 1.

Shaft **40** is rotated by means of electric motor **46** which is connected to shaft **40** through transmission **47**, as best seen to the left in FIG. 2.

Support wall **50**, as best seen to the right in FIGS. 1 and 2 is shaped like mounting board **30** and dimensioned to cover the end wall **12**. Legs **51** and **52** extend down beneath the lowermost part of the crib structure as previously described in connection with legs **31** and **32**.

Provided for securement to support wall **50** is a bearing **55** having a flnage plate **56** secured thereto. Bearing **55** is dimensioned to accommodate the journal pin of pivot journal assembly **25**.

Tie rod struts **60** are provided to extend between mounting board **30** and support wall **50** as best seen in FIG. 2 to maintain the components in assembled relationship.

OPERATION

As will be apparent to those skilled in the art, the aforedescribed rocking mechanism may be employed in connection with a variety of structures where it is desired to impart a rocking motion to the structure. As illustratively described the rocking mechanism has been shown as applied to a crib **10**.

Installation of the rocking mechanism with respect to the crib **10** is accomplished by securing the pivot journal assemblies **20** and **25** to opposed end walls **11** and **12** of crib **10**. Track assembly **15** is secured to one of the side walls of the crib **10** to provide a trackway **18** at a spaced distance from the pivot axis provided by pivot pins **21** and **25**. In the illustrated embodiment, the pivot axis is shown as beneath the trackway, however, it will be apparent to those skilled in the art that the pivot axis may be positioned at any point on the member to be rocked. It is preferred that the pivot axis serves to support the member to be rocked in a desired stable position.

Thereafter the mounting board **30** and support wall **50** are arranged so that bearings **35** and **55** accommodate the pivot pins of pivot assemblies **20** and **25**. Roller **42** is arranged in trackway **18**. In order to insure maintenance of the mounting board **30**, support wall **50** and crib structure **10** in assembled relationship, appropriate tie rod struts **60** may be extended between the mounting board as illustrated in FIG. 2.

Thereafter, by connecting motor **46** to a source of energization, the rotation of shaft **40** causes roller **42** to move against the side walls of trackway **18**, which as illustrated in FIG. 3 produces a desired rocking motion in the crib **10**.

It is thus seen that a simple rocking mechanism has been provided lending itself to distribution in kit form for installation without the exercise of particular mechanical skills, nor requiring the use of particular tools.

What is claimed is:

1. A rocking mechanism kit adapted for installation in connection with a member to be rocked, said kit comprising a mounting board dimensioned of a size to extend over an end wall of the member to be rocked; an apertured flanged bearing bushing on said mounting board; an electric motor secured to said mounting board; a shaft rotatably supported on said mounting board and coupled to said motor; a cam roller eccentrically positioned on said shaft; a track assembly formed of two channel members adapted for securement at a spaced apart distance on an end wall of said member to be rocked; and an apertured flanged pivot journal assembly adapted for securement below said shaft to the member to be rocked for engagement in said bearing bushing.

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