

Dec. 20, 1960

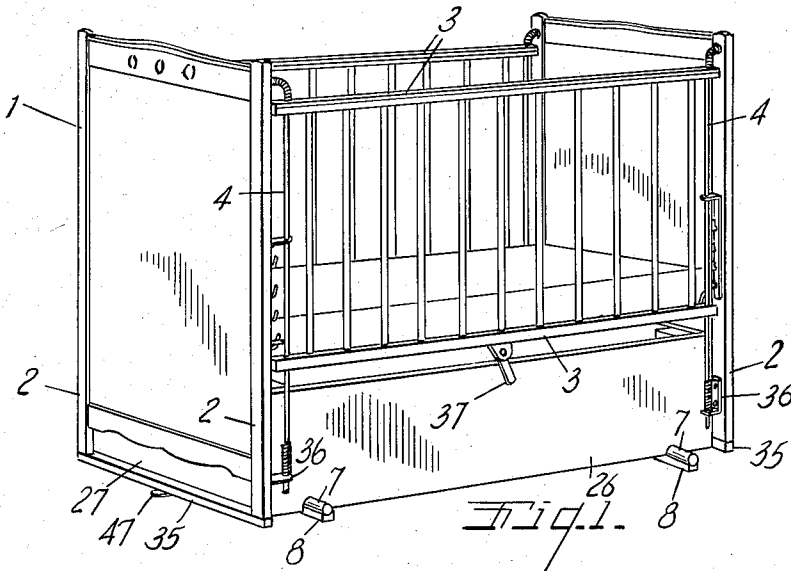
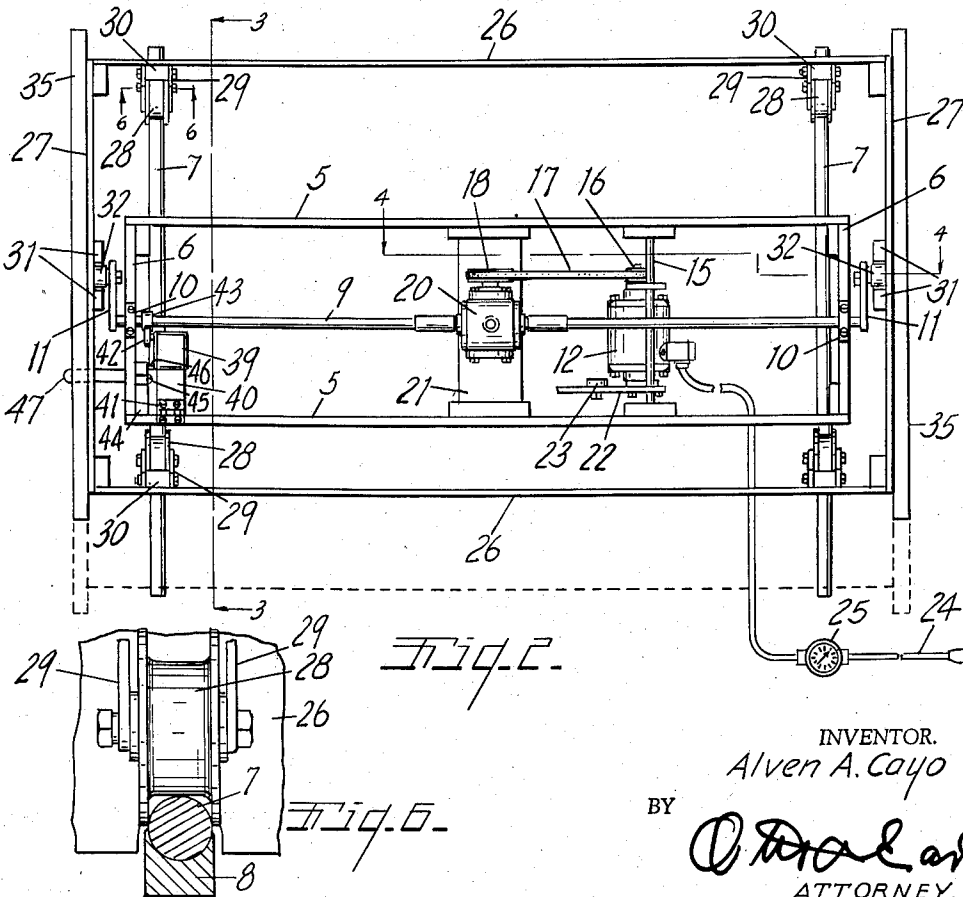
A. A. CAYO

2,964,761

RECIPROCATABLE POWERED CRADLE, BED OR THE LIKE

Filed July 2, 1958

2 Sheets-Sheet 1



INVENTOR.
Alven A. Cayo
BY
[Signature]
ATTORNEY.

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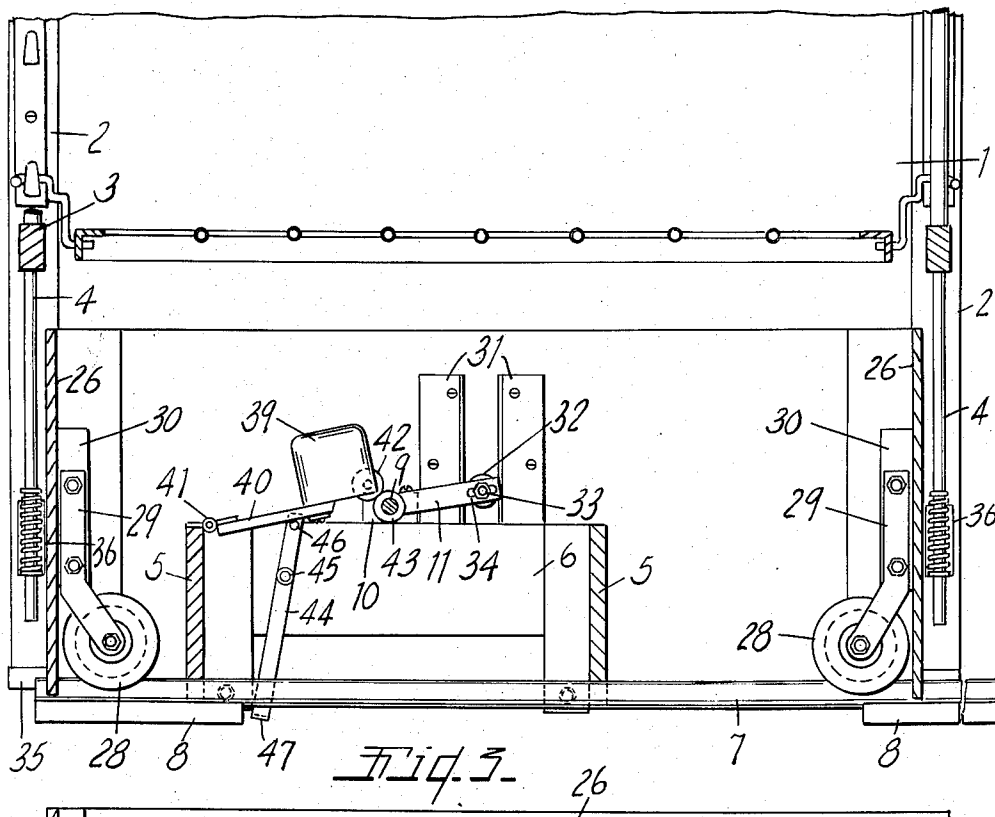
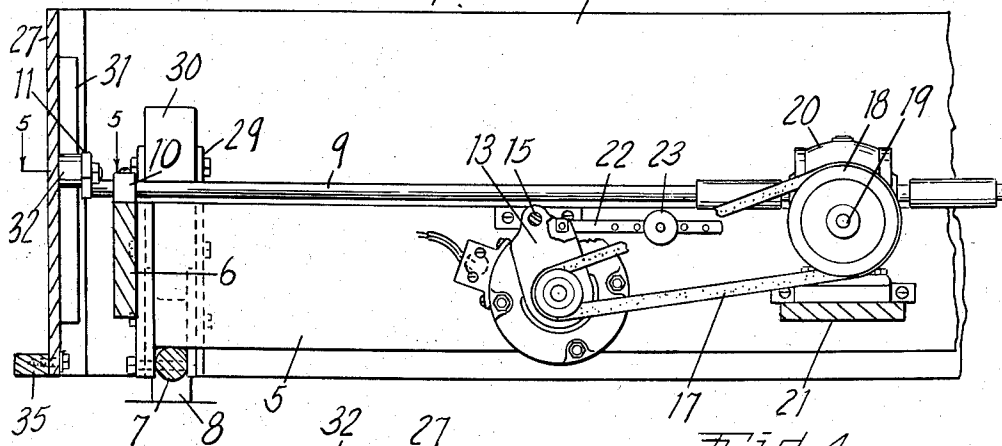
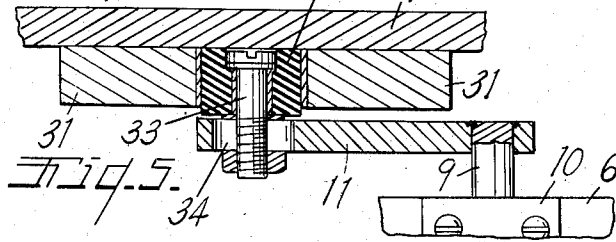
A. A. CAYO

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RECIPROCATABLE POWERED CRADLE, BED OR THE LIKE

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2 Sheets-Sheet 2



INVENTOR.
Alven A. Cayo
BY *Orlando Earl*
ATTORNEY.

1

2,964,761

RECIPROCAL POWERED CRADLE, BED OR THE LIKE

Alven A. Cayo, 241 W. May St., Benton Harbor, Mich.

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5 Claims. (Cl. 5—109)

This invention relates to a reciprocable powered cradle, bed or the like which has a smooth reciprocating stroke or movement and is substantially noiseless in operation.

The main objects of this invention are:

First, to provide a supporting and operating unit for cradles, beds and the like which is adapted to receive beds or cradles of different designs when dimensioned to seat the same and one in which the bed or cradle is removably supported so that it can be used with or without the reciprocating means.

Second, to provide a bed or cradle reciprocating apparatus which may be powered by an electric motor of relatively small horsepower and one which may be stopped by a timed control switch.

Third, to provide a structure of the class described which is very unlikely to become clogged by toys or like objects and one in which it is practically impossible for a child or operator to be injured.

Fourth, to provide a structure having these advantages which may be quite economically produced and operated.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of an assembled cradle or bed structure embodying my invention.

Fig. 2 is a plan view with the cradle or bed removed, the carriage being shown in full lines at one end of the stroke and at the other end by dotted lines.

Fig. 3 is an enlarged fragmentary transverse sectional view on a line corresponding to line 3—3 of Fig. 2 with the cradle or bed in operative position.

Fig. 4 is an enlarged fragmentary view partially in longitudinal section on a line corresponding to line 4—4 of Fig. 2.

Fig. 5 is an enlarged fragmentary view partially in section on a line corresponding to line 5—5 of Fig. 4.

Fig. 6 is an enlarged fragmentary view partially in section on a line corresponding to line 6—6 of Fig. 2.

It should be understood that the cradle or bed 1 may vary greatly in design but that the operating mechanism and bed and cradle are proportioned so that the bed or cradle may be mounted on the operating mechanism.

In the embodiment illustrated the legs 2 are conventionally shown as being of flat cross section. The slatted sides 3 are mounted for vertical adjustment on the supporting rods 4 and the supporting parts are dimensioned so that these sides 3 may be raised and lowered as occasion may require.

The frame-like face member comprises the side members 5 and end members 6, these are desirably of substantial vertical height and are fixedly connected, the connections however not being illustrated. The carriage rails 7, preferably of rod section, are fixedly mounted upon the base member to project laterally therefrom, as is clearly illustrated in Fig. 2, and are desirably provided with support members 8 of rubber or the like, the outer ends of which

2

are flush with the ends of the rails as is illustrated in Fig. 1 so that the support members serve as guards for the projecting ends of the rails. The driving shaft 9 is disposed longitudinally of the base member and supported by bearings 10 mounted on the end members 6 with the ends of the shaft projecting beyond the ends of the base member of the end members 6.

The shaft 9 is provided with aligned cranks 11 mounted on its projecting ends. The shaft is driven from the electric motor 12 which is swingably supported by the hangers 13 on the cross rod 15 which extends between the side members of the base member.

The motor shaft 16 is connected by the belt 17 to the wheel or pulley 18 on the shaft 19 of the transmission designated generally by the numeral 20. The details of the transmission are not illustrated but it will be understood that it is a speed reducing transmission. This transmission is mounted on the cross bar 21 extending between the base side members 5 and this also serves as a support for the drive shaft 9.

The hangers for the motor are provided with a tensioning weight 22 consisting of an arm with an adjustable weight 23 thereon. This provides a friction drive for the motor to the transmission. The purpose of the friction drive being to prevent injury to the parts should the carriage (to be described) become clogged or be held against reciprocation. For illustration, the reciprocation can be stopped at any time by an attendant merely standing in the path of the carriage.

The electrical connections are indicated at 24 and include a timed switch conventionally illustrated at 25. The purpose of this is that the switch may be set to stop the motor after a predetermined period of operation such, for example, as is estimated would be sufficient to cause the occupant to sleep.

The carriage of the embodiment illustrated is a frame-like structure and comprises the side members 26 and end members 27. In the preferred embodiment illustrated these being of substantial width and fixedly secured together, the connecting means not being illustrated. The carriage is dimensioned to embrace the base member other than the rail portions thereof which projects from the base member to permit a substantial reciprocatory movement of the carriage on its rail engaging wheels 28. These wheels 28 are desirably grooved and are mounted on the inner sides of the side members 26, the wheel brackets or supports 29 being bolted to lugs 30 provided therefor on the inner sides of the carriage side members. The lower edge of the side members are desirably notched to receive the track so that the lower edges of the side members are reciprocated closely adjacent to the floor, the purpose of this being to guard against objects getting inside of the carriage. This serves a double function or purpose, and prevents objects becoming inaccessible and also getting between the base member and the side members of the carriage to clog the movement of the carriage.

The upright ways 31 are, in the embodiment illustrated, in the form of a spaced pair of way members disposed vertically and centrally on the inner side of the end members of the carriage, the cranks being provided with way engaging rollers 32 desirably of nylon or the like. The track engaging wheels 28 are also desirably of nylon or other nonmetallic material which avoids the necessity for lubrication and are silent in operation on associated parts, the cranks being slotted at 34 to receive the crank pins 33, see Fig. 5. This enables substantial variation of stroke.

The cradle, bed supporting bars 35 are mounted on the outer sides of the end members of the carriage to project laterally therefrom so that the cradle or bed may be positioned with its legs in supported engagement therewith, as illustrated in Fig. 1.

With the legs in supported engagement with the bars 35 the brackets 36 for the lower ends of the supporting rods 4 engage the side panels of the carriage so that the bed or cradle is translated with the carriage. The lever or hand piece 37 (see Fig. 1) is operatively connected with the supporting rod for the side members 3 but as this forms no part of the invention the details are not illustrated.

In the embodiment of my invention illustrated I provide a music box 39 which is mounted on the arm 40 swingably supported at 41 and provided with a driving wheel 42 engageable with the wheel 43 rotatable with the shaft 9, see Fig. 3.

The wheel 42 is adjusted to and from driving engagement with the wheel 43 by means of the lever 44 which is pivoted at 45 and provided with a projection 46 engageable with the supporting arm 40. The lever has a hand piece 47 which projects beneath the adjacent supporting rail 35, see Fig. 2.

I have illustrated my invention in a highly practical embodiment thereof. I have not attempted to illustrate other embodiments and adaptations as it is believed this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. The combination with a cradle, bed or like supported member provided with legs, of a base member, carriage rails disposed transversely of said base member and projecting laterally therefrom, a carriage comprising side and end members and provided with rail engaging wheels, said carriage being dimensioned to embrace said base member and to permit reciprocation of the carriage on said rails relative to the base member, a carriage driving shaft mounted on said base member with its ends projecting beyond the ends thereof, said shaft having aligned cranks on its projecting ends, ways disposed on said carriage to coact with said cranks, means for driving said shaft mounted on said base member, said carriage being provided with supports for the supported member.

2. In a structure of the class described, the combination of a frame-like base member comprising fixedly connected side and end members of substantial width disposed vertically edgewise, carriage rails disposed transversely of said base member adjacent the ends thereof with the rails projecting laterally from both sides of the base member, a frame-like carriage for a supported member having legs comprising side and end members of substantial width disposed vertically edgewise, said carriage having grooved rail engaging wheels mounted on the inner sides of its side members, said carriage being dimensioned to embrace said side members and to permit reciprocation of the carriage on said rails relative to the base member, a carriage driving shaft disposed longitudinally and centrally of said base frame with its ends projecting beyond the ends thereof, said shaft having aligned cranks on its projecting ends provided with way engaging rollers, vertical ways disposed on the inner sides of said carriage end members to coact with the rollers on said cranks, means for driving said shaft mounted on said base member between the longitudinal members

thereof and including an electric motor having speed reducing transmission connection to said shaft, and support members disposed on said carriage to supportedly receive the legs of the supported member.

3. A structure of the class described comprising a base member including side and end members, carriage rails disposed transversely of said base member and projecting laterally therefrom, a carriage comprising side and end members provided with rail engaging wheels housed within the carriage, said carriage being dimensioned to embrace said base member and to permit reciprocation of the carriage on said rails relative to the base member, a carriage driving shaft mounted on said base member and having aligned cranks disposed at the ends of the base member, vertical ways disposed on the inner sides of said carriage end members to coact with said cranks, means for driving said shaft mounted on said base member and including an electric motor having speed reducing driving connection to said shaft, and support members on said carriage for the supported member.

4. A structure of the class described comprising a base member including side and end members, carriage rails disposed transversely of said base member and projecting laterally therefrom, a carriage comprising side and end members provided with rail engaging wheels housed within the carriage, said carriage being dimensioned to embrace said base member and to permit reciprocation of the carriage on said rails relative to the base member, a carriage driving shaft mounted on said base member and having aligned cranks disposed at the ends of the base member, vertical ways disposed on the inner sides of said carriage end members to coact with said cranks, means for driving said shaft mounted on said base member, and support members on said carriage for the supported member.

5. A structure of the class described comprising a base member, carriage rails disposed transversely of said base member and projecting laterally therefrom, a carriage provided with rail engaging wheels, said carriage being dimensioned to embrace said base member and to permit reciprocation of the carriage on said rails relative to the base member, a carriage driving shaft mounted on said base member and having aligned cranks disposed at the ends of said base member, ways disposed on said carriage members to coact with said cranks, means for driving said shaft mounted on said base member, and support members on said carriage for the supported member.

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