

[54] SWING APPARATUS

[72] Inventor: Earl R. Morris, 560 South Cole Street, Indianapolis, Ind. 46241

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[56]

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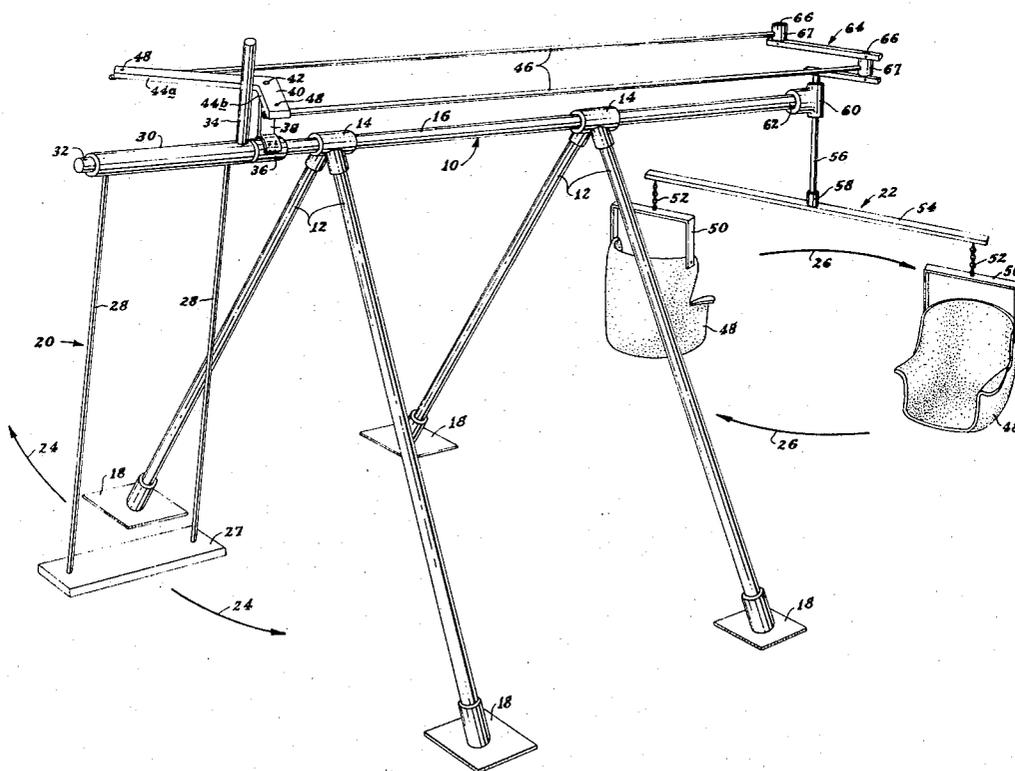
Primary Examiner—Anton O. Oechsle
Assistant Examiner—Arnold W. Kramer
Attorney—Robert A. Spray

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ABSTRACT

A swing set apparatus, providing that the pendulum-type swinging movement of a swing also provides the power for the revolving movement of a seat assembly on other portions of the apparatus.

3 Claims, 1 Drawing Figure



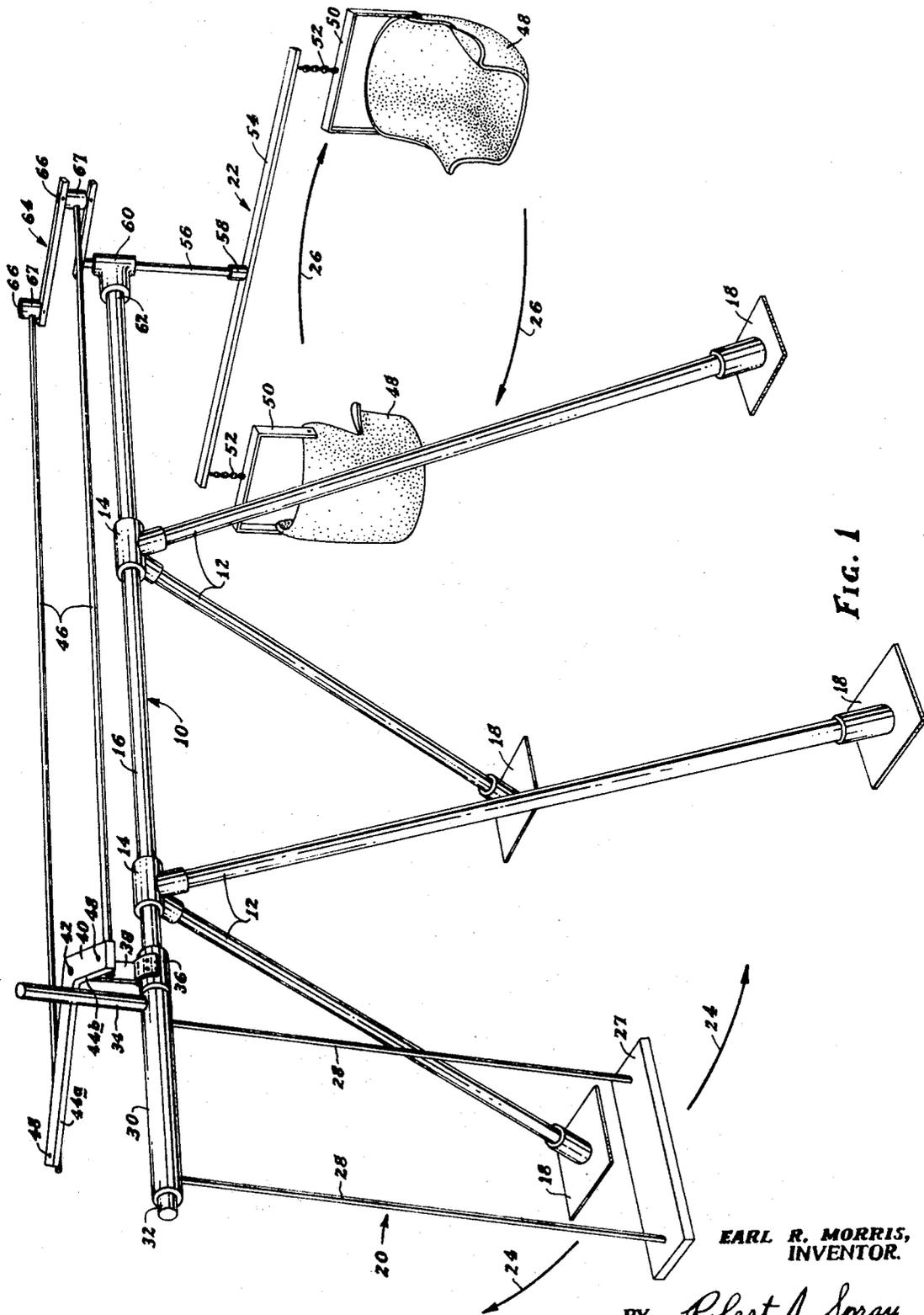


FIG. 1

EARL R. MORRIS,
INVENTOR.

BY *Robert A. Spray*

ATTORNEY

SWING APPARATUS

This invention relates to a swing set apparatus, in which the energy for revolving seats or the like is supplied by a portion of the energy supplied to cause a swing to move in a pendulum-swinging movement. Thus, for example, the energy of an older child in the activity of swinging is partially used to power the revolving chair or seats which could be used by younger children.

Thus, in a sense, the activity of the older child automatically provides the power or energy for the movement of the younger children who might occupy the seats which revolve. Even though the energy required by the older child in accomplishing his swinging movements is inevitably more than would be required for him to supply energy solely to his swing, that child's expenditure of such extra effort will be probably less objectionable to him than would be his having to supply power to younger children's apparatus without any apparent movement of his own to enjoy.

The above description is quite introductory and general; and the above and further concepts, and other details and features of the invention, will be further apparent in the following description of an illustrative embodiment, taken in conjunction with the accompanying diagrammatic and schematic drawings, in which:

The FIGURE is a pictorial representation of a swing set apparatus embodying the concepts of the invention.

As shown in the drawings, a swing set apparatus 10 is formed to have framing members including a pair of axial spaced supporting structures shown as the frames 12, which, through suitable brackets or collars 14, support an elongated horizontal frame member 16. The lower end of each member of the end frames 12 is shown as provided with a suitable base 18.

Other suitable framing or truss members may be provided, such as braces extending generally horizontally in each of the end frames 12 or other bracing as desired; but such extra braces are not indicated in the drawing, in view of the fact that the framing of the swing set is itself not a part of the present invention.

According to the concepts of the present invention, the swing set apparatus 10 includes at least two operational components, which in general terms may be mentioned as a swing 20 and a revolving seat assembly 22. Other play equipment, such as slides, ladders, and other apparatus, may also be supported by the framing 10; however, such other types of apparatus are omitted from the drawing, as are extra bracing and framing members omitted, that is, because they are not part of the present inventive concepts:

According to the concepts of the present invention, it is provided that a portion of the energy required to swing the swing 20 is utilized as the power source for moving the seat assembly 22. It will be understood that the swing assembly 20 oscillates or moves in a pendulum-type swinging movement, as indicated by the reference arrows 24; and it will also be understood that the seat assembly 22 moves in a rotational movement, as indicated by the reference arrows 26. The swinging movement 24 of the swing 20 is of course about a horizontal axis; and the revolving movement 26 of the seat assembly 22 is about a vertical axis.

The swing assembly 20 is shown as having a seat 27 which is supported by bars 28 which are relatively rigid, in comparison to the relatively flexible supporting members such as chains or ropes which are found in the usual swing support means. The rigidity of said supporting bars 28 is such that they move throughout substantially as much rotational angle as does said swing seat 27, achieving movement for driving the linkage which operatively interconnects said swing 20 and said seat assembly 22.

These support bars 28 of the swing 20 are connected to a movable collar 30 which is shown as surrounding an end portion 32 of the upper framing bar 16. The collar 30 is provided with an upright lug or bar 34; and, it will be apparent that the swinging movement 24 of the swing 20 will effect a rotational oscillation of both the collar 30 and the upright bar 34.

Adjacent the collar 30, the horizontal framing bar 16 is provided with a fixed collar 36; and, to the collar 36, there is mounted a fixed bracket 38. A bell crank or pitman 40 is mounted, as by a supporting pin 42, to the fixed bracket 38; and the mounting of the bell crank 40 is such that it is permitted to move in a horizontal plane, the movement of the crank 40 being caused by the movement of the upright lug or bar 34 as that bar moves into abutting engagement with either of the faces 44a or 44b of the bell crank 40.

Connecting bars 46 are movably secured, as by pins 48, to the respective ends of each of the legs of the bell crank 40; and these connecting bars 46 extend horizontally to transmit power from the swing 20 to the seat assembly 22, as now described for the drive linkage as in this embodiment.

As shown in the drawings, the seat assembly 22 includes a pair of seats 48, each of which is shown as supported by a bracket 50 and a chain 52 to an outer end of a horizontal support bar 54; and the support bar 54 is shown as supported by a vertical support bar 56 by a collar 58 which non-rotatably interconnects the vertical bar 56 with the horizontal support bar 54.

The vertical support bar 56 is shown as extending upwardly through a collar 60 shown secured to an end portion 62 of the horizontal support frame member 16. And, it will be understood that the collar 60 provides for suitable low-friction revolution of the vertical support bar 56, as well as provides vertical or thrust support for the support bar 56 and the seat assembly 22.

Above the collar 60, the vertical support bar 56 is provided with a crank assembly indicated generally by reference numeral 64; and this crank assembly 64 includes a pair of cranks 66 which extend vertically and are located diametrically opposite on the imaginary crank circle about the axis of the vertical support bar 56. It is to each of the cranks 66 that the connecting bars 46 are rotatably connected, by collars 67 secured to the adjacent ends of connecting rods 46; and thus the pendulum-oscillating motion 24 of the swing 20 is transmitted to the seat assembly 22 to effect its revolving movement.

It is seen that a swing set apparatus according to the inventive concepts provides a device which provides that the swinging movement of a swing will be utilized as the energy or power for the rotational or revolving movement of a seat assembly. Thus the present invention accomplishes its intended objects, including those both hereinbefore pointed out and others that are inherent in the invention.

It will be understood that variations and modifications may be effected without departing from the scope of the novel concepts of the present invention. Accordingly, the invention is not to be considered limited to the specific form or arrangement herein described and shown.

What is claimed is:

1. A swing set apparatus, comprising:

a supporting frame;

a swing supported by said frame, and adapted to be manually moved in swinging movement of pendulum-type rotational oscillation about a horizontal axis, and

a seat assembly supported by the frame and adapted to be moved in a revolving movement about a vertical axis;

there being drive transmission means provided, operatively linking said swing and said seat assembly, providing that the pendulum-type rotational oscillation of the swinging movement of said swing operatively drives the said seat assembly in its said revolving movement;

the frame including stationary support means rigidly interconnecting spaced portions of said swing set apparatus; there being first drive means stationarily connected to said swing, and providing a portion of said drive transmission means;

the said drive transmission means also including second drive means which are movable with respect to both the said stationary support means of the frame and with respect to the said first drive means and are movably driven by said first drive means;

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the said drive transmission means also including third drive means, said third drive means including vertically extending support means;

an eccentric drive connection between said second drive means and said third drive means

the said first drive means, second drive means, and third drive means co-operating as described above with one another and with the apparatus frame and with the said swing and seat assembly to achieve the said drive of the said seat assembly as an incident to and in response to pendulum-type swinging movement of the said swing.

2. The invention as set forth in claim 1 in which said swing includes a seat and supporting means operatively supported by said frame and supporting said swing seat;

said supporting means being of rigid nature operative to move throughout substantially as much rotational angle as does said swing seat in the pendulum-type rotational oscillation of said swing in its swing movement, achieving movement for driving the drive transmission means which operatively interconnects the said swing and said seat assembly.

3. The invention as set forth in claim 2 in which the rotational movement of said rigid-nature swing-supporting means is movement relative to said frame which is utilized to achieve movement of said seat assembly relative to said frame and thereby attain said revolving movement of said seat assembly.

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