Feb. 9, 1954 J. H. WILLIAMS 2,668,392

SPRING MOTOR OPERATED ROCKING DOLL

Filed Aug. 31, 1950 2 Sheets-Sheet 1

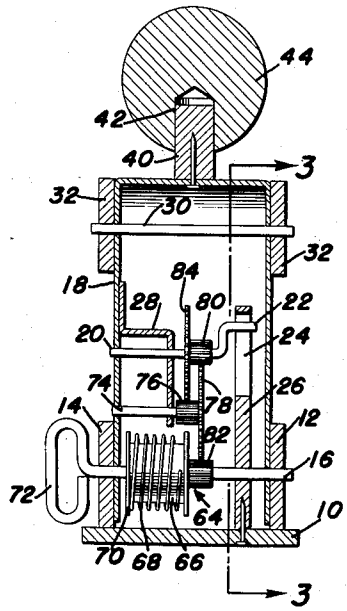


Fig. 2

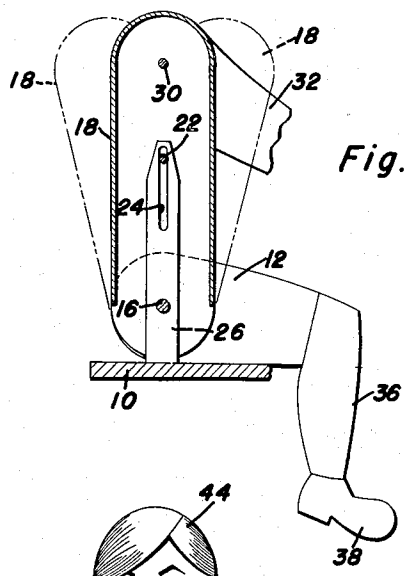


Fig. 3

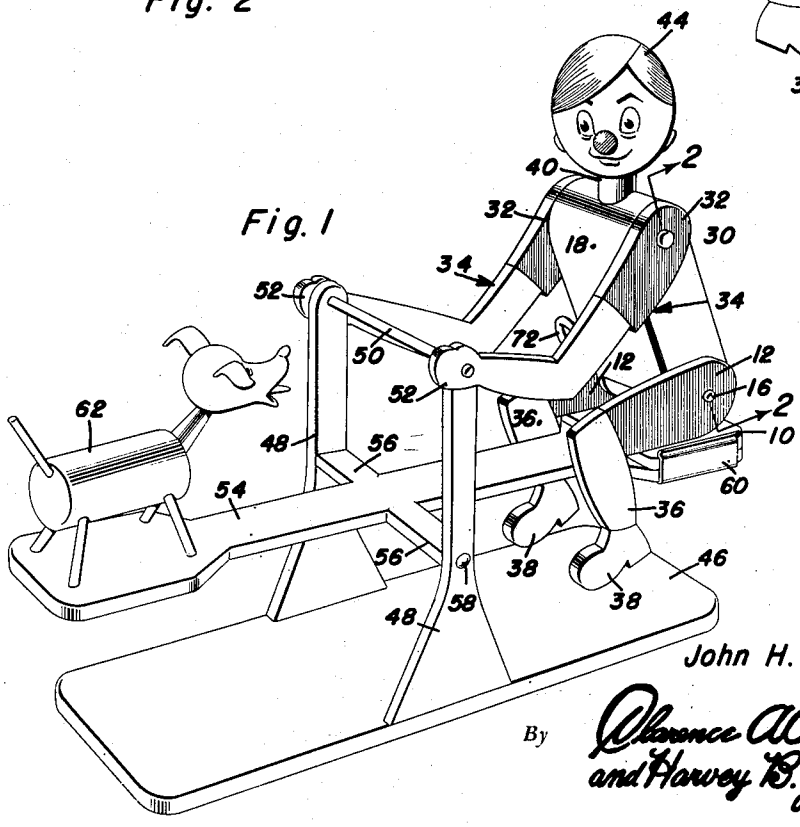


Fig. 1

Inventor

John H. Williams

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

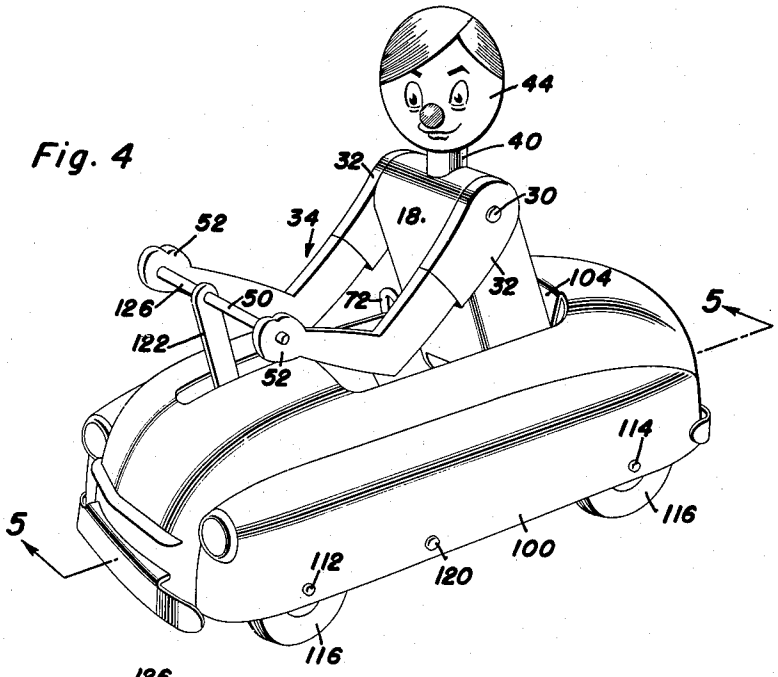
Feb. 9, 1954 J. H. WILLIAMS 2,668,392

SPRING MOTOR OPERATED ROCKING DOLL

Filed Aug. 31, 1950

2 Sheets-Sheet 2

Fig. 4



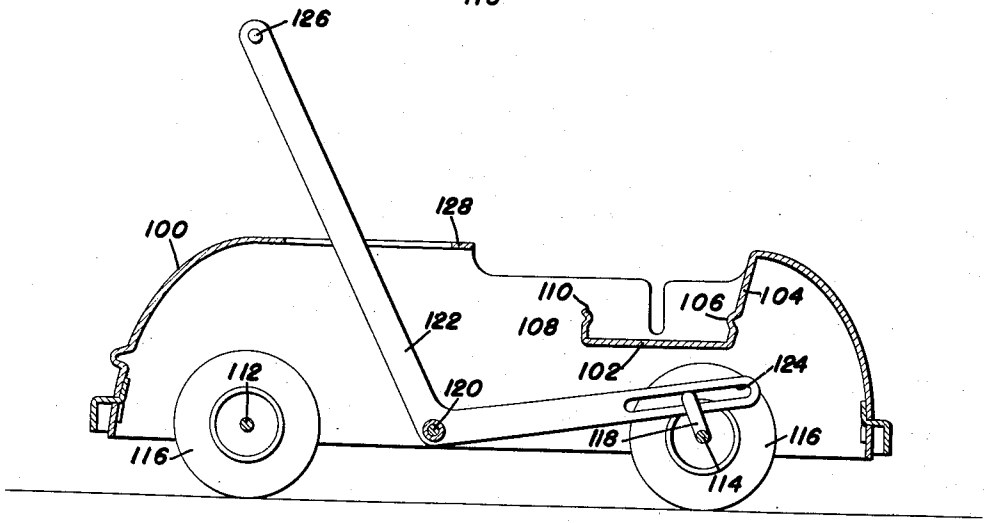


Fig. 5

Inventor

John H. Williams

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented Feb. 9, 1954

2,668,392

UNITED STATES PATENT OFFICE

2,668,392

SPRING MOTOR OPERATED ROCKING DOLL

John H. Williams, San Francisco, Calif.

Application August 31, 1950, Serial No. 182,485

12 Claims. (Cl. 46—107)

1

This invention relates to new and useful improvement in toys and the primary object of the present invention is to provide a spring-actuated oscillatory doll that may be mounted upon a stationary base or upon a toy vehicle.

Another important object of the present invention is to provide a mechanical doll including a vertically swingable hollow body having a spring motor mounted therein and so arranged as to impart oscillatory motion to the body.

Yet another object of the present invention is the provision of a mechanical doll detachably supported by a vehicle and so connected to the driving axle of the vehicle as to impart motion to the vehicle as the body is oscillated.

A further object of the present invention is to provide a vertically swinging spring-operated body mounted upon an imitation seesaw and pivotally connected to uprights supporting the seesaw so that as the body swings vertically it will impart swinging motion to the seesaw.

A still further aim of the present invention is to provide a mechanical doll that is extremely neat and attractive in appearance, strong and reliable in use, commercially practical, inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present invention mounted upon a seesaw;

Figure 2 is a sectional view taken substantially on the plane of section line 2—2 of Figure 1;

Figure 3 is a vertical sectional view taken substantially on the plane of section line 3—3 of Figure 2;

Figure 4 is a perspective view of the invention mounted on a toy vehicle; and

Figure 5 is a longitudinal vertical sectional view of the vehicle and taken substantially on the plane of section line 5—5 of Figure 4.

Referring now to the drawings in detail, wherein, for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a support or base including a pair of side members 12 and 14 that are provided with registering openings for rotating the ends of a horizontal pivot shaft 16.

A hollow body 18 is mounted on the shaft 16 for vertical swinging movement and is located between the side members 12 and 14. The body

2

18 rotatably supports a horizontal rod 20 having an offset 22 that is slidably and rotatably positioned in the vertical slot 24 in an arm 26 rising from the base 10 and mounted in the body 18. A bracket 28, within the body 18, constitutes a bearing for the rod 20, since it rotatably supports the rod 20.

A second horizontal pivot shaft 30 extends through the upper portion of the body and parallels the pivot shaft 16. The ends of the shaft 30 project outwardly from the flat sides of the body 18 and support the inner ends 32 of bellcranks 34. The bellcranks 34 are in the form of arms and are suitably colored to add to the attractiveness of the toy.

The side members 12 are in the form of legs and include depending extensions 36 terminating in feet 38. The side members 12, including the extensions or lower limbs 36 and feet 38, are also suitably colored or painted. A neck-forming lug 40 is secured to and rises from the upper end of the body 18 and its upper end is suitably fixed in a recess 42 formed in a ball-like head 44. The head 44 is provided with ears, hair, eyes, a nose and a mouth which may be painted on or suitably secured to the head by glue or the like.

A main support or base 46 underlies the toy doll and supports a pair of uprights 48 whose upper ends are provided with registering apertures through which a horizontal shaft or pin 50 is extended. The ends of the pin 50 project outwardly from the sides of the uprights 48 and through the outer ends 52 of the bellcranks 34.

A vertically swingable member or seesaw 54 extends between the uprights 48 and overlies the base 46. Lateral projections 56 are provided at the central portion of the member 54 and a horizontal rod or pivot 58 extends through the projections 56, the member 54 and the uprights 48 to permit vertical swinging movement of the member 54. The base 10 of the doll overlies one end of the member 54 and is releasably held thereon by a channel-shaped clip or bracket 60 and a suitable object or toy dog 62 is suitably secured to the other end of the member 54.

A spring motor 64 is mounted within the hollow body 18 for rotating the shaft 20 so that oscillatory motion will be imparted to the body 18 about the shaft 16 as a pivot. Although various arrangements of the spring motor may be employed, it is preferred that the motor be mounted on the shaft 16 and that the motor consist of a drum 66 journaled on the shaft 16 with a coil spring 68 about the drum and having one

end secured to the drum and its other end secured to a plate 70 that is keyed on the shaft 16. One end of the shaft 16 is bent to form a finger grip 72 that is disposed exteriorly of the body 18.

Another horizontal shaft 74 is rotatably supported by the body 18 and bracket 28 and carries a pinion 76 and a gear 78. The gear 78 meshes with a pinion 80 secured on the shaft 20 and another pinion 82 that is rotatable on the shaft 16 and which is secured to the drum 66. The shaft 20 also supports a gear 84 that meshes with the pinion 76. Through this construction, the shaft 20 will be rotated by the spring motor at a relatively slow speed.

In practical use of the invention, the body 18 is manually held against movement on the pivot 16 and the shaft 16 is rotated, by the grip 72, to tighten the spring 68 which will remain wound, since the body 18 is held against swinging. When the body 18 is released, the spring 68 will unwind and in so doing will rotate the rod 20, through the gear and pinion arrangement, whereupon the crank portion or offset 22 will rotate and slide in slot 24 to oscillate the body 18 about the pivot 16 as shown by dotted lines in Figure 3.

As the body 18 swings relatively to the uprights 48, the member 54 will rock down and up.

Figures 4 and 5 illustrate the doll mounted upon a toy vehicle 100 having a seat construction 102 on which the base 10 is supported. The seat construction 102 is resilient and its back 104 is formed with a detent 106 that will engage over the base 10. The forward portion of the seat construction 102 is formed with a tongue 108 having a detent 110 that will snap over the base 10 to hold the doll on the seat construction of the vehicle 100.

The vehicle 100 includes forward and rear axles 112 and 114 supporting wheels 116 and the rear axle 114 is bent to form a crank portion 118.

A horizontal pivot 120 is carried by the vehicle. The pivot 120 parallels the axles 112 and 114, and is located between the axles 112 and 114. The pivot 120 extends through the apex of a bellcrank lever 122 whose lower end is formed with an elongated slot 124 that slidably and rotatably receives the crank portion 118.

The upper end of the lever 122 supports a horizontal shaft 126 whose ends extend through the outer ends 52 of the bellcranks 34. The vehicle 100 is formed with a longitudinal slot 128 that slidably receives the lever 122.

The doll mounted in the vehicle, as shown in Figure 4, is identical to the doll specifically described for Figures 1–3, inclusive, and as the body 18 swings back and forth about its pivot 12, the lever 122 will also rock back and forth to rotate the shaft 114 counter-clockwise and thereby impart forward motion to the vehicle, it being understood that the slot 124 and crank portion 118 are so proportioned with respect to each other and with the size of the lever 122 and the arc of swing for the body 18 to permit the axle 114 to rotate counter-clockwise.

Although the toy described, more specifically the doll, has been illustrated in conjunction with a seesaw and a toy vehicle, it is obvious that the doll may be employed in conjunction with many other such toy structures to cause various motions as the body 18 oscillates.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A mechanical doll comprising a support, a spring tensioned pivot shaft carried by said support, a body swingably mounted on said shaft, means operatively connecting said shaft to said body and said support for oscillating the body about the shaft as a pivot, a second pivot shaft carried by the body and paralleling the first-named shaft, a lever on said second shaft, and a member engaging said lever to support said body during oscillation of said body, said body oscillating means including a rotary shaft carried by said body and having an offset, a post forming a part of said support and extending into the body, said post having a slot disposed laterally of the pivot shaft receiving said offset.

2. A mechanical doll comprising a base, a spring tensioned pivot shaft carried by said base, a body mounted on said shaft for oscillation, said base including a post extending upwardly into the body and having a slot disposed laterally of said shaft, said shaft extending through and being rotatably supported by said post, a bar paralleling the shaft and rotatably supported by said body and having an offset slidably and rotatably mounted in said slot, and means operatively connecting said bar to said shaft for rotating the bar to oscillate the body.

3. A mechanical doll comprising a base, a pivot shaft carried by said base, a body mounted on said shaft for oscillation, said base including a post having a slot disposed laterally of said shaft, a bar paralleling the shaft and rotatably supported by said body and having an offset slidably and rotatably mounted in said slot, and means operatively connected to said bar for rotating the bar to oscillate the body, said body being hollow, and said means including a spring motor mounted within the body and on said shaft.

4. A mechanical doll comprising a base, a spring tensioned pivot shaft carried by said base, a body mounted on said shaft for oscillation, said base including a post having a slot disposed laterally of said shaft, a first bar paralleling the shaft and rotatably supported by said body and having an offset slidably and rotatably mounted in said slot, and means operatively connecting said shaft to said bar for rotating the bar to oscillate the body, a second bar rotatably supported by said body and paralleling the first-named bar and the shaft, a pinion on each bar and said shaft, a gear carried by the second bar engaging the pinions on the shaft and the first-named bar, and a second gear on the first bar and engaging the pinion on the second bar.

5. A mechanical doll comprising a base including a pair of side members, a shaft carried by said side members, a hollow body mounted on said shaft and between said side members for swinging movement, an arm supported on said base within said body and having an elongated slot disposed laterally of said shaft, a rod rotatably supported by said body and paralleling the shaft, said rod having an offset slidably and rotatably received in said slot, power means within said

body and supported on and connected to said shaft for rotating the latter, and means operatively connecting said shaft to said rod for rotation of the latter during rotation of the former.

6. A mechanical toy comprising a main support, an elongated vertically swingable member mounted on said support, an auxiliary support carried by one end of said member, a pivot shaft carried by said auxiliary support, a body mounted on said shaft for swinging movement, a rod paralleling said shaft and rotatably supported by said body and having an offset, an arm mounted on said auxiliary support and having a slot disposed laterally of said shaft and slidably and rotatably receiving said offset, means for rotating said rod to impart oscillation to said body, and a lever terminally pivoted to said body and said main support.

7. A mechanical toy comprising a main support, an elongated vertically swingable member mounted on said support, an auxiliary support carried by one end of said member, an object carried by the other end of said member, a pivot shaft carried by said auxiliary support, a body mounted on said shaft for swinging movement, a rod paralleling said shaft and rotatably supported by said body and having an offset, an arm mounted on said auxiliary support and having a slot disposed laterally of said shaft and slidably and rotatably receiving said offset, means for rotating said rod to impart oscillation to said body, a second rod carried by said body and paralleling said shaft, a pair of bellcranks carried by said second rod, and a pivot pin paralleling the second rod and supported by said main support and attached to said bellcranks.

8. A mechanical toy comprising a main support, an elongated vertically swingable member mounted on said support, an auxiliary support carried by one end of said member, a pivot shaft carried by said auxiliary support, a body mounted on said shaft for swinging movement, a rod paralleling said shaft and rotatably supported by said body and having an offset, an arm mounted on said auxiliary support and having a slot disposed laterally of said shaft and slidably and rotatably receiving said offset, means for rotating said rod to impart oscillation to said body, a second rod carried by said body and paralleling said shaft, a pair of bellcranks carried by said second rod, and a pivot pin paralleling the second rod and supported by said main support and attached to said bellcranks, said body being hollow, said means including a spring motor connected to said shaft and gear means operatively connecting said shaft to said first-named rod.

9. A mechanical toy comprising a support having forward and rear axles and wheels on each axle, said rear axle having a crank portion, a vertically swingable bellcrank lever carried by said support and including a portion having a slot receiving the crank portion to impart rotation to the rear axle upon vertical swinging movement of the lever, a base mounted on said support, a horizontal pivot carried by the base, a body mounted on said pivot for swinging movement, an arm rising from the base and including a vertical slot, a horizontal rod rotatably supported by said body and including an offset rotatably and slidably received in said slot, a horizontal pivot shaft carried by said body, at least one lever connecting said bellcrank lever to said pivot shaft, and means operatively connected to said rod for rotating the latter.

10. A seesaw toy comprising a main support including a pair of uprights, an elongated vertically swingable member centrally pivoted between the uprights, a weight on one end of the member, an auxiliary support at the other end of said member, a horizontal shaft carried by the auxiliary support, a body mounted on said shaft for vertical swinging movement toward and away from the uprights, an upper horizontal shaft carried by the body, a horizontal rod carried by the uprights above the member and paralleling said upper shaft, a pair of bellcranks terminally attached to said upper shaft and said rod, and means operatively connected to the body to impart swinging movement to the body, said body being moved relatively to the uprights to permit raising of the end of the member on which the body is supported and said body being moved relatively to the uprights to permit lowering of the end of the member on which the body is supported.

11. The combination of claim 10 and means releasably securing said auxiliary support on said member.

12. The combination of claim 11 wherein said means releasably securing said auxiliary support on said member comprises a channel shaped clip receiving one end of said member, said auxiliary support including a base having side edges, said clip including spaced flanges engaged with the side edges of said base and retaining the base against the member.

JOHN H. WILLIAMS.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
921,258	Kingsbury	May 11, 1909
1,247,115	Howe	Nov. 20, 1917
1,429,289	Maxwell et al.	Sept. 19, 1922
1,477,412	Adams	Dec. 11, 1923
1,674,943	Berger	June 23, 1928
1,923,801	Slagle	Aug. 22, 1933
2,066,736	Muse	Jan. 5, 1937