

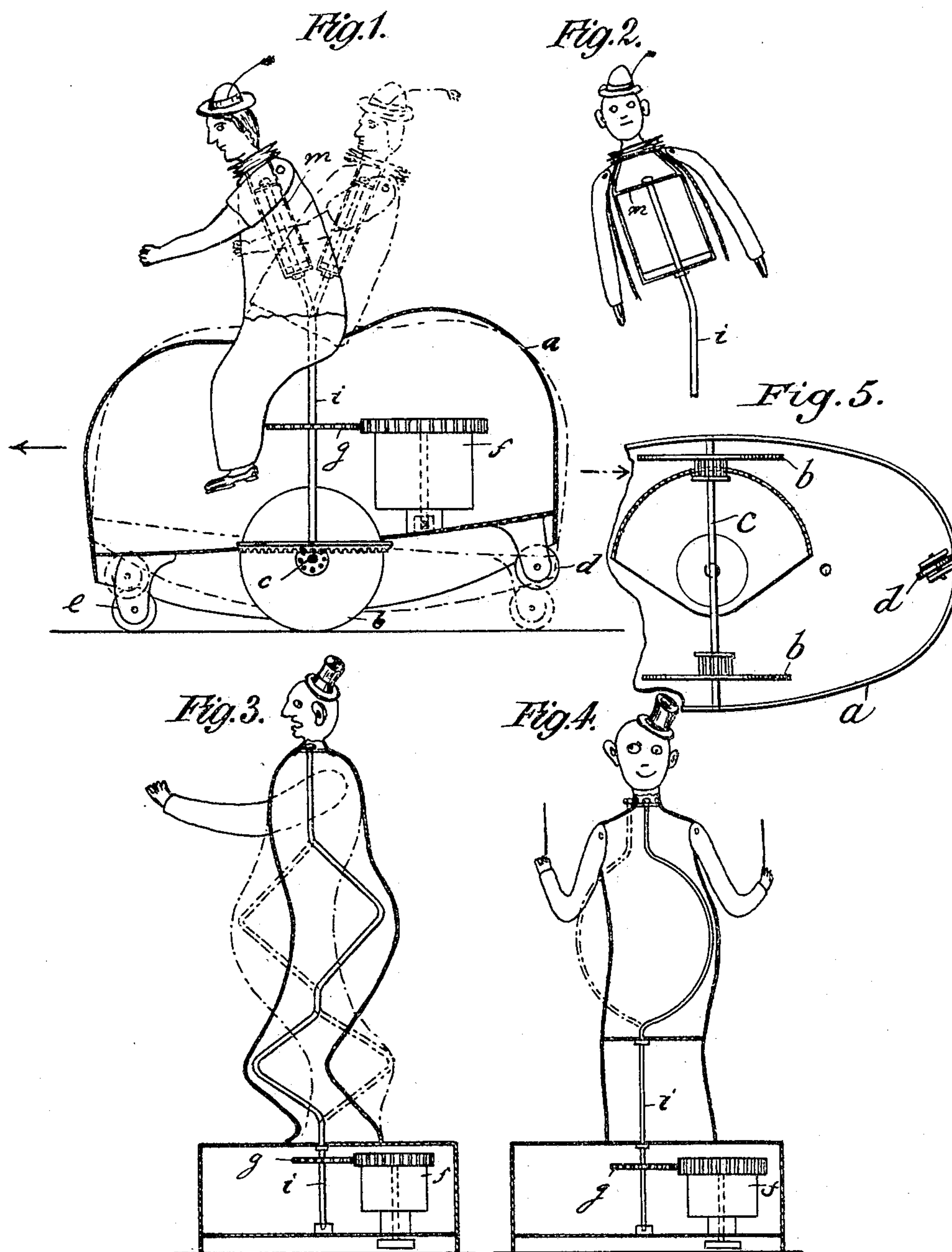
No. 788,110.

PATENTED APR. 25, 1905.

E. P. LEHMANN.

TOY.

APPLICATION FILED OCT. 21, 1903.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## TOY.

SPECIFICATION forming part of Letters Patent No. 788,110, dated April 25, 1905.

Application filed October 21, 1903. Serial No. 177,951.

*To all whom it may concern:*

Be it known that I, ERNST PAUL LEHMANN, a subject of the King of Prussia, Emperor of Germany, and a resident of No. 6 Plauerstrasse, Brandenburg-on-the-Havel, in the Kingdom of Prussia, German Empire, have made certain new and useful Improvements in Toys, (for which I have made application for Letters Patent in Germany, dated February 24, 1903, Serial No. L. 17,848, and in England, dated July 28, 1903, No. 16,597,) of which the following is a specification.

My invention relates to improvements in toys; and it consists in providing in a toy a rotating or reciprocating shaft carrying a human, animal, or other figure and having one or more portions of its length bent or deflected from the straight line, whereby a variety of effects may be derived.

The accompanying drawings serve to illustrate my invention by showing its application in various modifications.

Figure 1 is a side elevation, partly in section, of a toy mounted on wheels and carrying a human figure secured to the upper portion of a rotating shaft, the said upper portion of the shaft being deflected from the straight line of the said shaft. Fig. 2 is a front elevation of the said figure, the body of which is shown in section. Fig. 3 is a sectional elevation of a stationary toy having a rotating shaft which carries a human figure, the body of which is formed by a supple flexible material, such as cloth or fabrics. The shaft has two portions of its length bent from the straight line in opposite directions. Fig. 4 is a sectional elevation of a similar toy the rotating shaft of which has but one arc-shaped bent portion and the free end of which shaft is out of line with the portion to which the rotating motion is imparted. Fig. 5 is a partial bottom plan of Fig. 1, showing details of construction.

Referring to Fig. 1, *a* is a hollow frame of any suitable shape—such, for instance, as that of a horse or other animal or of a boat or ship. The said frame *a* is carried by wheels *b*, projecting beyond the lower side of the frame, the axle *c* of said wheels *b* being so arranged to form a center of equilibrium for the frame,

which by this means is capable of rocking about said axle, as indicated by dotted lines. Guide-pulleys *d* and *e* are arranged beneath the frame *a* and are carried by suitable brackets. Said pulleys *d* and *e* are preferably secured in an angular position relative to the wheel-axle *c* in such a manner as to guide the toy in an oblique direction; but the said pulleys may be set at right angles to the axle *c*, in which case the toy will move in a straight direction.

Within the frame *a*, forming a supporting-base, a suitable driving mechanism—such, for instance, as a spring-barrel *f*—is secured by suitable means, the gear-wheel of said driving mechanism imparting motion to the gear-wheel *g* of a shaft *i*, the lower end of which carries a crown-wheel *h*, meshing into a pinion *j*, which is secured to one of the wheels *b*. The crown-wheel *h* may be toothed on the whole of its circle, and in this case the toy will only be able to move in one direction, or the said crown-wheel *h* may be toothed only to the extent of one-half of its circumference, and in such case it will alternately gear with the pinion *j* of one of the wheels *b* and a corresponding pinion of the other wheel *b*, whereby the toy will be caused to alternately move in one direction and in the opposite direction in a manner known and used before in mechanics generally.

The upper portion of the shaft *i* is bent out of a straight line, and to the said bent portion the frame *m* of a suitable figure is either rigidly or loosely mounted. The frame *m* and figure thereby is swung round, as indicated by dotted lines, the lower portion of said figure being independent of the upper rotating portion. If the frame *m* be loosely mounted to the shaft *i* and the figure carried by said frame has a hold—such, for instance, as bridles—preventing its turning round, the figure will follow the swinging motion of the bent portion of shaft *i* and the face of said figure will nevertheless continue to be turned toward the front. It will be seen that as the frame *m* and figure form a weight carried by the shaft *i* the state of equilibrium of the toy will alternately change, as the frame *m* will either take the forward position, as indicated in full lines,



Fig. 1, or the rearward position, as indicated by dotted lines. The change of equilibrium will make the frame *a* tilt toward one or the other end, and thereby the two guide-pulleys *d* and *e* are alternately brought into contact with the ground, thus changing the line of motion if the said guide-pulleys are set in an oblique direction.

The change of equilibrium of the toy caused by the weighted bent portion of the shaft *i* is not only applicable to toys moving on wheels, but also to stationary toys—such, for instance, as a rocking-horse or the like.

The rocking motion of the frame *a*, together with the alternately forward and rearward swinging motion of the figure carried by the bent portion of the shaft *i*, will create the appearance of a rider on horseback or of a boatsman handling the oars of a boat dancing upon the waves.

Instead of providing the shaft *i* with a bent or deflected portion at one of its ends the bent portion or portions may be provided at an intermediate part of the shaft, as shown in Figs. 3 and 4. The body of the figure in this case is formed by a flexible material, such as cloth or fabrics, and during the rotation of the shaft *i* the angular or arc-shaped portions of said shaft will cause the body to become bulged or convex to that side where the projecting portion of the shaft is moving on. The body of the toy figure thereby is caused to perform motions which appear ridiculous, and the more so as the actuating-shaft and its irregular shape is concealed within the surrounding garment.

In the modification represented by Fig. 4 the free end of shaft *i* is out of line with the opposite end carried in a bearing. The portion of the figure carried by said free end of the shaft accordingly will be swung around to either side of the axis of motion, and the comical appearance thereby will be still increased.

I claim as my invention—

1. In a toy, the combination, with a base, of a shaft having one or more portions of its length bent or deflected from a straight line at an obtuse angle, a figure carried by the deflected portion of said shaft, a covering for said figure and including the point of deflection of the shaft, and means for imparting motion to the shaft about its axis.

2. In a toy, the combination, with a base, of a shaft having one or more portions of its length bent or deflected from the straight line, means for imparting motion to the shaft, a figure carried by said shaft, and flexible material loosely surrounding the figure and the shaft including the point of deflection.

3. In a toy, the combination, with the base, of a shaft having one or more portions of its length bent or deflected from the straight line, a figure eccentrically carried by the free end of said shaft, flexible material loosely sur-

rounding said figure and the shaft including the point of deflection, and mechanism for imparting motion to said shaft.

4. In a toy, the combination, with a base, and wheels pivotally supporting the same and permitting it to rock, of a shaft mounted on the base substantially over the axle of the wheels and having a portion of its length deflected from a straight line, a figure mounted upon the deflected portion of the shaft, and means for imparting motion to the shaft.

5. In a toy, the combination, with a base, and wheels supporting the same at the center of equilibrium, of a shaft mounted on the base substantially over the axle of the wheels and having a portion of its length deflected from a straight line, a figure mounted upon the deflected portion of the shaft, and means for imparting motion to the shaft.

6. In a toy, the combination, with a base, of a set of wheels supporting the same, a wheel-axle about which the said frame is capable of rocking, a shaft mounted on the base substantially over the axle of the wheels and having one or more portions of its length deflected from the straight line, a figure mounted upon the bent portion of said shaft, and means for imparting motion to the said shaft and thereby rocking the base.

7. In a toy, the combination, with a base, wheels pivotally supporting the same at the center of equilibrium, other wheels arranged on each side of the rocking wheels, the two sets of wheels occupying different horizontal planes, of a shaft mounted on the base substantially at the center of equilibrium and having a portion of its length deflected from a straight line, a figure mounted upon the free end of the shaft, and means for imparting motion to the shaft about its axis.

8. In a toy, the combination, with a base, wheels pivotally supporting the same at the center of equilibrium, other wheels arranged on each side of the rocking wheels and disposed at an angle to the line of travel thereof, of a shaft mounted on the base substantially over the center of equilibrium and having a portion of its length deflected from a straight line, a figure mounted upon the deflected portion of the shaft, and means for imparting motion to the shaft.

9. In a toy, the combination, with a base, of a shaft secured thereto at one end and having a portion of its length deflected from a straight line, the free end of said shaft being out of line with the axis of the shaft, a figure mounted on the deflected portion of the shaft and having a body of flexible material loosely surrounding said shaft including the point of deflection, and means for imparting motion to said shaft about its axis.

10. In a toy, the combination, with a base, and wheels supporting the same, of a shaft mounted on said base and having a portion of its length deflected from a straight line, a fig-



ure mounted upon the deflected portion of the shaft, a motor for imparting rotary motion to the shaft, and means for throwing said shaft at intervals into gear with the different supporting-wheels.

11. In a toy, the combination, with a base, and a pair of wheels pivotally supporting the base and permitting it to rock, of a shaft mounted on the base substantially over the axle of the wheels and having a portion of its length deflected from a straight line, a figure mounted on the deflected portion of the shaft,

a motor arranged to impart rotary motion to the shaft, a mutilated gear carried by the shaft and engaging alternately with each of the pair of wheels. 15

In testimony whereof I affix my signature to this specification in the presence of two witnesses.

ERNST PAUL LEHMANN.

Witnesses:

WOLDEMAR HAUPT,  
HENRY HASPER.