May 2, 1933. C. A. WETZELL 1,907,419

TOP

Filed Dec. 18, 1931

Fig. 1.

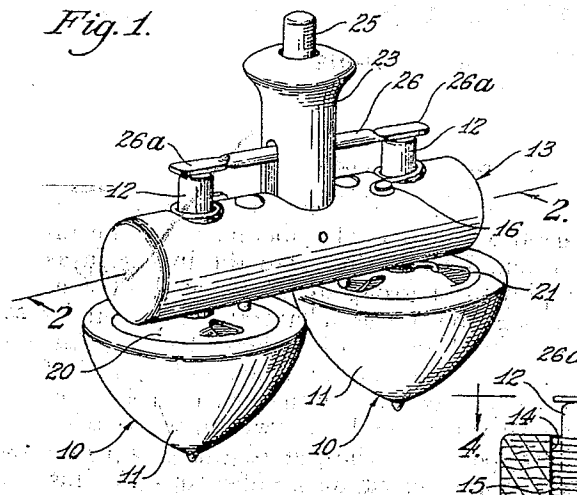


Fig. 2.

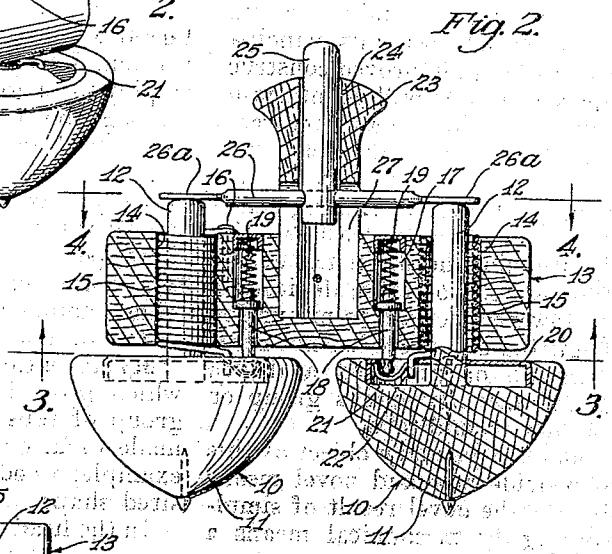


Fig. 3.

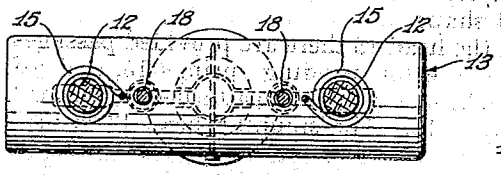
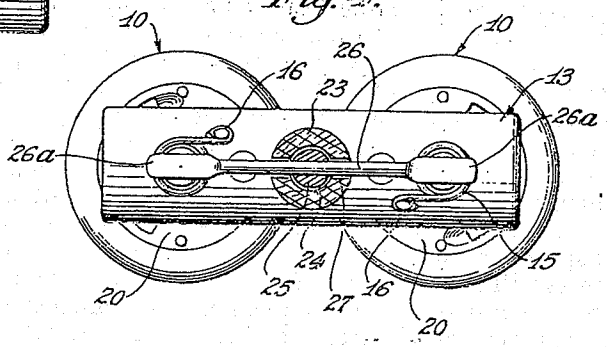


Fig. 4.



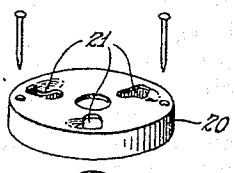
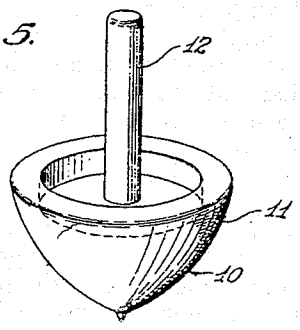


Fig. 5.



Clare A. Wetzell.
INVENTOR

BY Victor J. Evans & Co.

HIS ATTORNEYS

Patented May 2, 1933 1,907,419

UNITED STATES PATENT OFFICE

CLARE A. WETZELL, OF STERLING, ILLINOIS

TOP

Application filed December 18, 1931. Serial No. 581,973.

This invention relates to certain novel improvements in tops, and has for its principal object the provision of an improved construction of this character which will be entertaining in use and economical to manufacture.

I am aware that in the toy maker's art various types of spring-rotated tops are known and likewise various types of spinning heads and trigger mechanisms for releasing the tops from the spinning heads in the act of spinning the tops. All of these devices of the prior art, however, pertain to means for spinning a single top and there has not heretofore been known or provided a device which will simultaneously spin a group or plurality of spring-wound tops.

It is, therefore, the primary object of this invention to provide new and novel means for accomplishing the novel result of simultaneously spining by mechanical means a group or plurality of spring-wound tops.

Other objects of the invention are: To provide a new and unique spinning head common to and for winding a plurality or group of spring-wound tops; and to provide a new and unique combination of the said spinning head with a trigger mechanism by means of which, in a simple operation, a group or plurality of spring-wound tops may be simultaneously released from the spinning head in the act of spinning the tops.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing showing the preferred form of construction, and in which:

Fig. 1 is a perspective view of a practical embodiment of the invention;

Fig. 2 is a sectional view on line 2—2 in Fig. 1;

Fig. 3 is a bottom plan view of the spinning head on line 3—3 in Fig. 2;

Fig. 4 is a top plan view of the spinning head on line 4—4 in Fig. 2; and

Fig. 5 is a perspective detailed view of a conventional type of top that is employed to illustrate the invention.

In the drawing, which represents a preferred and practical embodiment of the invention, I have illustrated the invention as employing a group of two tops 10 of conventional design, each having a body 11 and a stem 12; although it is to be understood that I do not limit the invention to a group of two tops but may, with such modifications in structure as will come within the scope of the appended claims, employ a group of a larger number of tops. The tops 10 illustrated may be made of any suitable material and be of any desired design.

My invention includes spinning head 13 which provides a common support for the group of tops 10 and this head 13 may be made of any suitable material such as, for example, wood or metal and be of any desired shape.

In the head 13 there are provided passages 14 for the top winding springs 15, each of which has an end portion attached to the head 13 as at 16. The spinning head 13 is provided with passages 17 in each of which is a spring-actuated pin 18; the pins 18 being urged by springs 19 into bearing engagement with caps 20 attached to the bodies 11 of the tops 10. In each of the caps 20 a series of radially arranged recesses 21 is provided and the pins 18 are urged by the springs 19 to dispose the outer end portions of the pins in these recesses to hold the tops in engagement with the spinning head during and after completion of the winding of the springs 15 with the tops 10 and the head 13 are assembled and the hooked ends 22 of the springs 15 are engaged in preselected recesses 21 in the caps 20.

Attached to the spinning head 13, or formed integrally therewith as desired, is a finger grip 23 in which is provided a passage 24. Movably associated with the finger grip 23 by being slidably mounted in the passage 24 is a plunger or trigger 25 for releasing the tops 10 as a group from the spinning head after the completion of the winding operation. Movable by the trigger 25 by being attached thereto is a member 26 which is movable in a slot 27 in the finger grip 23 and the outer end portions 26a of the member 26 bear

upon the top stems 12 whereby the group of tops 10 may be simultaneously released as a group from the spinning head, after the completion of the winding operation, by pressing with the thumb or finger upon the trigger 25 while holding the finger grip 23 in the hand; thus simultaneously spinning a group of tops by means of a single operation and creating an effect that is both novel in the art and entertaining.

It is evident that by lengthening the member 26 and the common support or spinning head 13 and by providing additional springs 15 and associated parts the number of tops 10 that may be mounted in the spinning head or common support 13 and simultaneously released as a group therefrom may be increased to any number desired.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A toy comprising a spinning head for a group of tops, each including a stem, spring means carried by the head for winding the tops, said head including a portion providing a finger grip, means for holding the tops on the head during and after completion of the winding operation, and a trigger mechanism including a member slidably mounted in said finger grip and operable upon said stems for simultaneously releasing the tops from the head in the act of spinning the tops.

2. A toy comprising a common support for a group of tops each including a stem, spring means carried by the support for winding the tops, means for holding the tops on the support during and after completion of the winding operation, a finger grip on the support having a slot formed therein, a trigger movably associated with the finger grip, and a member attached to the trigger slidable in said slot and operable upon said trigger to disengage the tops simultaneously from said holding means during the act of spinning the tops.

3. In a toy, the combination of a top spinning head, a group of spring-wound tops each including a stem, an individual spring winding mechanism for each of said tops, said mechanisms being carried by and spaced apart on said head, means for holding each of said tops on the spinning head during and after completion of the winding operation, and a trigger release mechanism carried by said head and common to all of the tops in said group, said trigger mechanism including elements operable simultaneously upon said stems for releasing said tops as a group from the spinning head during the act of spinning the tops.

4. In a toy, the combination of a top spinning head having a plurality of spaced apart passages provided therein, an individual top spring winding mechanism in each of said passages, a group of spring-wound tops each including a stem and said stems being receivable in said passages within said winding mechanisms, means for holding each of said tops on the spinning head during and after completion of the winding operation, and a trigger release mechanism carried by said head and common to all of the tops in said group, said trigger mechanism including elements operable simultaneously upon said stems for releasing said tops as a group from the spinning head during the act of spinning the tops.

5. In a toy, the combination of a top spining head having a plurality of spaced apart passages provided therein, an individual coil spring top winding mechanism in each of said passages, a group of spring-wound tops each including a stem, said stems being receivable in said passages within said coil spring mechanisms and each having a portion adapted to project out from the corresponding passage beyond said head, means for holding each of said tops on the head during and after completion of the winding operation, and a trigger release mechanism carried by said head having elements operable upon said projecting stem portions for releasing said tops from said head during the act of spinning the tops.

6. In a toy, the combination of a top spinning head having a plurality of spaced apart passages provided therein, an individual coil spring top winding mechanism in each of said passages, a group of spring-wound tops each including a stem, said stems being receivable in said passages within said coil spring mechanisms and each having a portion adapted to project out from the corresponding passage beyond said head, means for holding each of said tops on the head during and after completion of the winding operation, said head including a portion having a slot formed therein, and a trigger release mechanism for said tops, said trigger mechanism including a plunger slidably mounted in said slot and elements attached to and projecting from said plunger, said elements being adapted to bear upon said projecting stem portions for simultaneously releasing said tops as a group from said head during the act of spinning the tops.

In testimony whereof I affix my signature.

CLARE A. WETZELL.

June 20, 1933. S. L. LONG 1,914,515

MECHANICAL TOY

Filed Sept. 18, 1931 2 Sheets-Sheet 1

Fig. 1

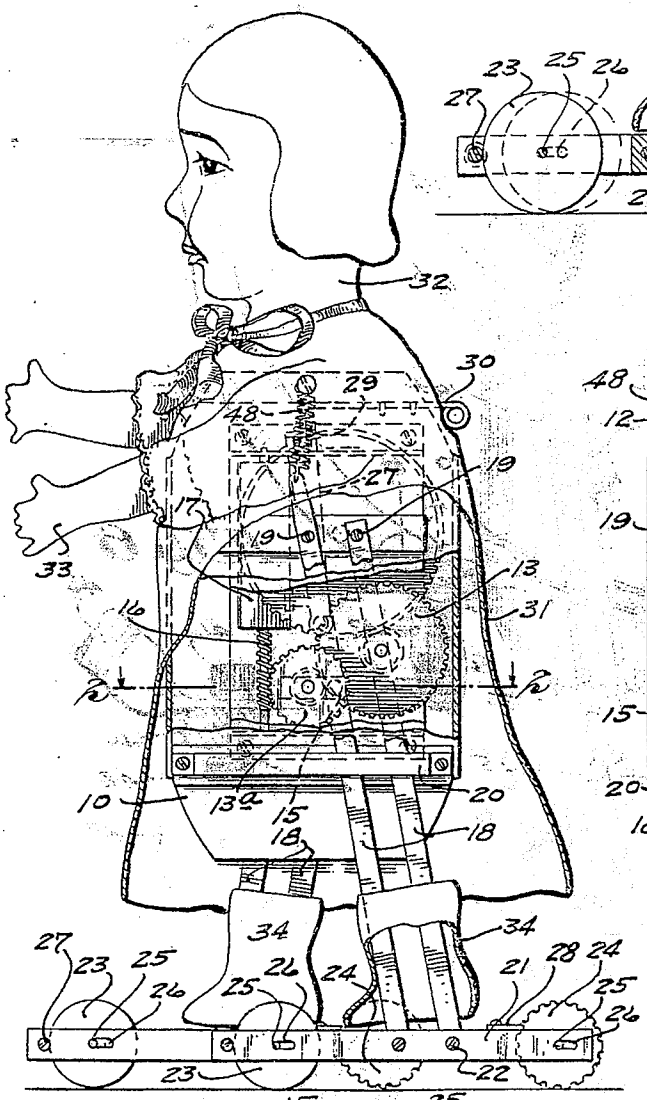


Fig. 4

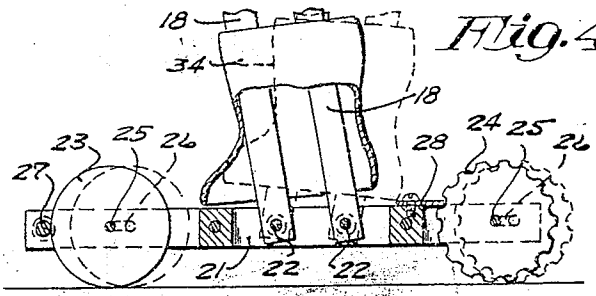


Fig. 3

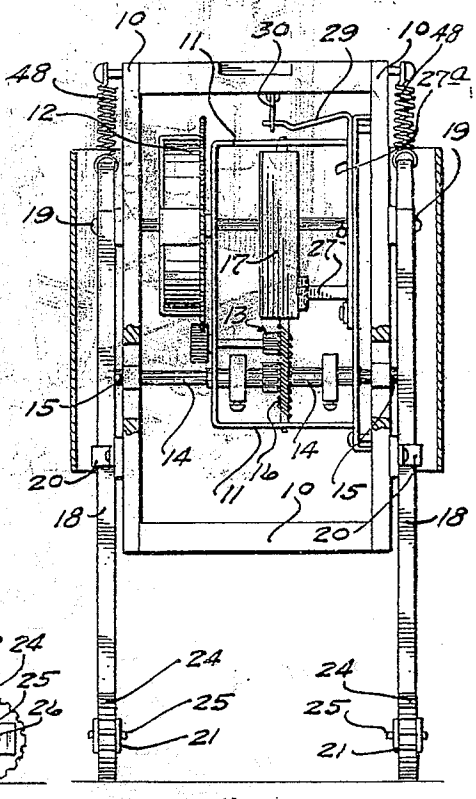
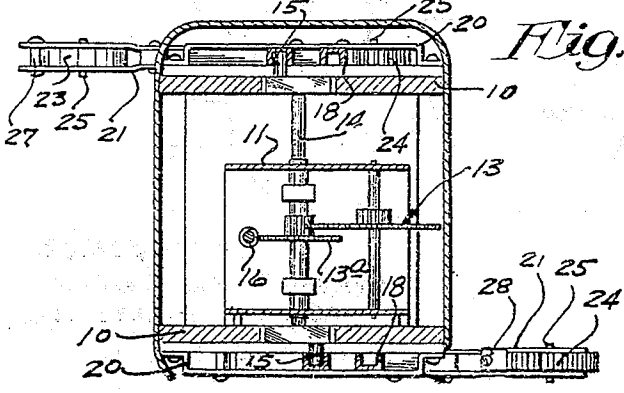


Fig. 2



Inventor
Sidney L. Long
By his Attorneys
Merchant Kilmore

June 20, 1933. S. L. LONG 1,914,515

MECHANICAL TOY

Filed Sept. 18, 1931 2 Sheets-Sheet 2

Fig. 5

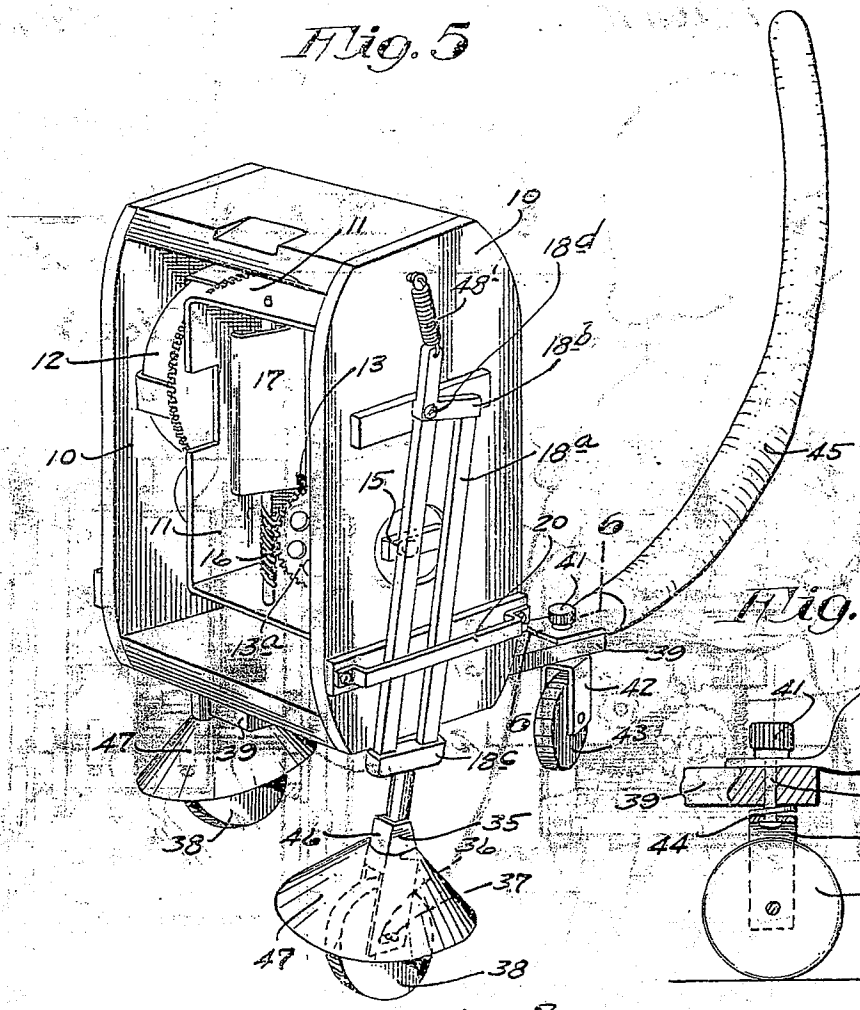


Fig. 6

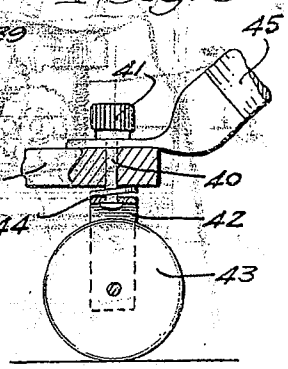


Fig. 7

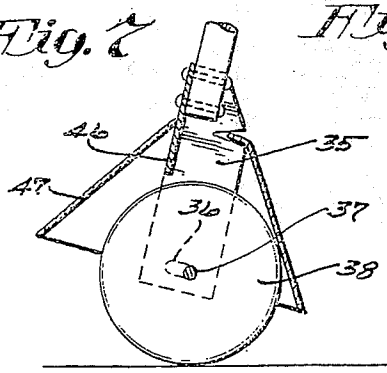
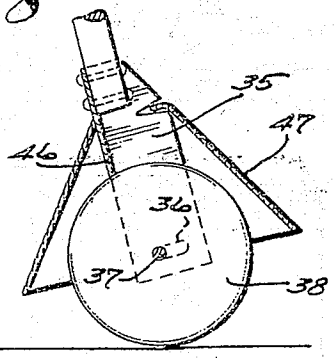


Fig. 8



Inventor
Sidney L. Long
By his Attorneys
Merchant & Gibson

Patented June 20, 1933 1,914,515

UNITED STATES PATENT OFFICE

SIDNEY L. LONG, OF MINNEAPOLIS, MINNESOTA

MECHANICAL TOY

Application filed September 18, 1931. Serial No. 563,554.

My present invention provides an improved self-contained travelling figure or object especially intended and adapted for use as a toy and which, when travelling, imitates the movements of the animal or object that it is designed to represent.

Generally stated, the invention consists of the novel devices, combinations of devices and arrangement of parts hereinafter described and defined in the claims.

As herein generically used, the term "body" means a frame or member that is adapted to be propelled by movements produced within itself, but which is preferably designed to represent an animate object; the term "legs" means vibratory or oscillatory movements by the movements of which, travel of the object is produced; the term "feet" or "foot members" designates portions at the lower ends of the legs and which are equipped with rollers or wheels arranged to freely rotate in one direction only so that travel of the object may be produced by the vibratory or oscillatory movements of the legs or leg members.

In this improved mechanical figure, herein usually designated as a toy, although it may be made in various different sizes, the legs are given oscillatory or vibratory forward or rearward movements in reverse order and the shoes are provided with rollers that freely rotate under forward movement, but are restricted frictionally or positively against reverse movements.

In the preferred form of the toy, the legs are made up of parallel bars, to the lower ends of which are pivotally connected wheel-equipped shoes; and in such preferred arrangement the legs are given oscillatory movements by a motor such as spring-actuated clock mechanism, and the shoes are provided with front and rear rollers or wheels so that the object is adapted to be supported in an upright position while being propelled forward. In the arrangement just indicated, the roller-equipped shoes give much the appearance of roller-skates, and in the travel of the figure, the leg movements closely imitate movements of the legs of a person on roller-skates. In a modified form of the device, the shoes are provided each with one roller or wheel and the figure is provided with a third or steering wheel, preferably at the rear, to sustain the figure in an upright position while travelling; and this third wheel is preferably made adjustable so that the figure may be caused to travel either straight ahead or on a circular line.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is an elevation showing the toy designed as above first indicated, some parts being broken away and some parts being in section;

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1, some parts being removed;

Fig. 3 is a rear elevation of the body portion and mechanism of the device shown in Fig. 1, the outer shell or dress portion and parts representing the figure or design of the toy being removed;

Fig. 4 is a vertical section with parts broken away showing one of the roller-equipped shoes and lower portion of one leg of the toy shown in Figs. 1, 2 and 3;

Fig. 5 is a perspective showing a modified form of the toy above referred to, but with the dress or outer covering and object-representing portions removed;

Fig. 6 is a fragmentary vertical section taken on the line 6—6 of Fig. 5; and

Figs. 7 and 8 are vertical sections taken on the line 7—8 of Fig. 5, illustrating the action of the roller or wheel of the shoe shown in Fig. 5.

Referring first to the toy shown in Figs. 1 to 4, inclusive, the numeral 10 indicates the rectangular body frame within which is secured a rectangular motor frame 11 on which latter a spring motor mechanism of the clock motor type is mounted. As the construction and operation of a spring motor mechanism of the above type is well known, the parts thereof may be briefly designated as follows: A motor spring 12 works through speed multiplying gears 13, drives a worm gear 13ª carried by a crank shaft 14. The ends of shaft 14 work through the sides of frame 10

and at their outer ends are provided with crank or wrist pins 15, set the one 180 degrees ahead of the other. Worm gear 13ª, through a worm-equipped shaft 16, drives a fan blade 17, the function of which is to retard the movement of the crank or wrist pins 15. The legs of this device are made up of parallel bars 18, the upper ends of which are pivoted at 19 to the outer sides of the frame 10 and the intermediate portions of which are held against lateral movements and work freely in guide-ways formed by metallic straps 20 secured on the outer sides of the frame 10 near the lower portion thereof. These bars 18 are preferably light metallic channels, the channels of which face inward so that the wrist pins 15 engage one with the channel of one bar 18 of each leg.

The feet or foot-forming members 21 of this device are shown as longitudinally slotted narrow flat members, to the intermediate portions of which the lower ends of the respective leg bars 18 are pivoted at 22. These shoes are provided with front rollers 23 and rear rollers 24, that work in the slotted ends of said shoes and are provided with spindles 25 journaled in short longitudinal slots 26 formed in the sides of the said shoes. When the rollers or wheels 23 are forced forward, they engage frictionally with brake or stop members shown as in the form of small bolts 27 applied through the front ends of the shoes. The rear wheels 24 are shown as peripherally notched or serrated and they are so arranged that when moved forward, their notched peripheries will engage with small lock clips 28 applied on the rear portions of the shoes. When the rollers 23 and 24 are moved rearward, they are disengaged from their co-operating brake or stop members and are then mounted for free rotation.

Obviously, if with the spring motor described, the fan blade 17 is held against rotation, the motor mechanism will be stopped, and there will be no leg movement then produced. To provide means for thus locking the motor with the spring wound under tension by the customary or any suitable means, I have shown a simple form of lock device comprising a lever 27ª pivoted to the frame 11 and provided with projecting arms 27ᵇ and 29, best shown in Fig. 3. The end of arm 29 is connected to an actuating rod or slide 30 mounted on the frame 11 with its outer end projecting where it may be engaged by the finger of the operator. Normally, the end of arm 27ᵇ will be in the path of movement of fan blade 17 so that the motor mechanism may be locked, but when rod 30 is pulled outward, the end of arm 28 will be moved out of the path of movement of the fan blade 17 and the motor mechanism will then be released.

The body mechanism of the device above described is shown as provided with a dress-like outer covering 31, with a doll head 32 and with hands 33; and for appearance sake, shells representing shoe uppers 34 are loosely applied around the lower ends of the legs so that the leg bars will not be exposed to view below the dress 31.

The operation of the toy described may be obvious from the foregoing description, but briefly summarized is as follows: When the motor is released for action, the cranks 15 will be rotated and the legs will be given simultaneous movements in reverse directions. When a shoe is moved forward, the rollers 23 and 24 cause their trunnions 25 to run back in the slots 26 and hence to freely rotate, but under initial rearward movement, the said rollers move forward in respect to the shoes and their front portions engage, in the one instance with stops 27 and in the other with stops 28. When the roller 23 engages stop 27, it will be frictionally held against rotation, and when the notched or serrated periphery of roller 24 engages its stop cleat 28, it will be positively held against rotation. In both instances, however, the rollers will be free to rotate when a shoe is pushed forward and will be held against reverse rotation and hence will become a relatively fixed base of reaction for the propulsion of the device in a forward direction. The four rollers of the two shoes will always be kept in contact with the floor or ground surface and as the rollers of the two shoes are laterally spaced, preferably substantially the width of the figure supported therefrom, the figure or body will be well supported against forward, rearward or lateral tilting. The numeral 48 indicates tension springs anchored at their upper ends to the side of the frame 10 and at the lower ends connected to upper end extensions of certain of leg-forming bars 18. These springs exert a light yielding force tending to hold the legs in vertical positions and assisting in moving the legs from extreme forward and rearward positions back to vertical intermediate positions.

It will of course be understood that a considerably greater power is required to move the legs toward one another from their outermost positions, than is required to move their legs toward one another while they are in close proximity to their vertical or dead center positions, this being due to the fact that the weight of the doll tends to spread the legs after they have moved in opposite directions beyond their dead center or vertical positions, and this force increases as the legs move farther apart. In the absence of spring 48, the above described action will tend to make the toy run in a jerky manner, that is, the action of the legs will be slow during initial return movements toward their vertical positions and will be considerably

accelerated during the outward movements, and in this case, the motor employed to oscillate the legs must at all times have enough power to overcome the weight of the toy during the return movements of the legs. When the spring 48 is employed in the manner illustrated, the power required to oscillate the legs will be substantially the same in all positions of the legs for said spring exerts a maximum return tension on the legs when they are in their outermost position and becomes increasingly inactive as the legs approach their dead center or vertical positions and is practically inactive at their dead center position. Experiments have proven that with a given spring motor, the doll will travel considerably farther when the spring is employed than it will with the spring omitted, and the action of the legs will be much more uniform and smooth.

From the foregoing, it is evident that the legs formed by parallel bars are important features when the shoes are provided with longitudinally spaced rollers and all of which rollers should be kept in contact with the floor or ground. The toy shown in Figs. 1 to 4, inclusive, is provided with shoes, the front and rear rollers of which are in the same vertical plane, so that the toy will be propelled forward on a straight line. Obviously, by curving the shoes and setting the rollers on arcs of curves, the figures could be arranged to travel on the line of a curve.

In the modified device shown in Figs. 5, 6, 7 and 8, the body frame, the motor, the gear mechanism and all of the movable parts down to and including the cranks 15 are the same as in the figure previously described, and illustrated in Figs. 1 to 4, inclusive, and hence all of the said parts up to and including said cranks 15 are indicated by the same numerals applied to the first described device. In the modified device however, the legs in lieu of the pivoted channel bars 18, are provided with like channel bars 18^a that are rigidly connected by upper and lower heads 18^b and 18^c, the heads 18^b being pivotally connected to the sides of the body frame 10 at 18^d. The lower heads 18^c are provided with depending bifurcated shoes 35 formed in their prongs with short slots 36 in which the trunnions 37 of rollers or small wheels 38 are journaled with said rollers between the said prongs. In the leg structure just described, the wrist pins of the cranks 15 engage one with one channel bar 18^a of each leg and impart simultaneous movements to the legs in reverse directions. Also the legs are guided against lateral movement by the straps 20 on the sides of the body frame 10. The body 10, at its lower portion, is provided with a rigidly secured rearwardly projecting bar 39 in which is pivoted a short upright post 40, shown as provided at its upper end with a knurled head 41 and provided at its lower end with a depending fork 42 in which a steering roller or wheel 43 is journaled. 48' indicates springs that perform the same function as the springs 48 heretofore described.

Obviously, this third wheel 43 with the wheels 38 will support the body in an upright position while it is being moved forward. The line of travel of the device will be regulated by the setting of the steering wheel 43.

To frictionally hold the fork 42 in any set position, a spring washer 44 is shown as interposed between the top of the fork 42 and the bottom of the bar 39. The numeral 45 indicates a projecting tail which would adapt the device when provided with a proper body, to represent certain animals such for example as a kangaroo or a dog walking on hind legs. The shoes 35 are provided with depending stop flanges 46 with which the upper portions of the rollers 38 are adapted to frictionally engage when the said rollers are moved forward in respect to the shoes by initial rearward movement of the shoe. When a roller is thus engaged with a stop flange 46, it will be held against backward rotation so that the roller will then become a fixed base of reaction for preventing backward movement of said leg, while the other leg is being moved forward to cause the body to travel in a forward direction. The numeral 47 indicates a roller housing which may be of flexible material, and which is shown as in conical form and is applied one to each of the shoes 45.

From the foregoing, it will be noted that the one-way rotation of the rollers or wheels of the shoes is accomplished simply by engagement and disengagement of a roller with a fixed element on the co-operating shoe, and without the use of a movable or third element. This means, while extremely simple, is highly efficient. From the statements above made, it is evident that the devices above described are capable of a wide range of modification within the spirit of the invention herein disclosed and claimed.

What I claim is:

1. In a mechanical toy, a body, legs connected to said body for vibratory movement, foot members at the lower ends of said legs, rollers mounted in said foot members for rotary movements and for limited forward and rearward horizontal travelling movements in respect thereto, and stops on said foot members with which said rollers are engaged when moved horizontally forwardly, to thereby restrict rotation of said rollers, and from which said rollers are disengaged and freed for rotation when moved horizontally rearwardly in respect to said foot members.

2. The structure defined in claim 1 in which certain of said rollers have notched surfaces that interlockingly engage the co-operating stops.

3. The structure defined in claim 1 in which said foot members are provided with front and rear rollers, whereby said body will be supported in an upright position while travelling movement is being imparted thereto, and in which both front and rear rollers are free for limited horizontally forward and rearward travelling movements and are provided with co-operating stops on the foot members.

4. The structure defined in claim 1 in which certain of said rollers have notched surfaces that interlockingly engage the co-operating stops, and in further combination with means mounted on said body for imparting vibratory movements to said legs.

5. In a mechanical device, oscillatory legs applied to the opposite sides of said body, rollers attached to the lower extremities of said legs, means for oscillating said legs, in line with said body, means for applying friction to said rollers when moved in one direction but allowing them to roll freely in the opposite direction, said means consisting of horizontally slotted foot members in which said rollers are directly mounted for free rotary movements and limited horizontally forward and rearward movements, said means for applying friction including stops on said foot members against which the peripheries of said rollers are engaged when moved forwardly in the slots of said foot members.

6. A mechanical device comprising a body having a pair of vibratory legs equipped with rollers and means for permitting the rollers to roll in one direction only, of yielding means operating on said legs and tending to move the same to intermediate positions.

7. In a mechanical toy, the combination with a body having a pair of pivoted depending legs equipped with rollers, and means for permitting the rollers to roll in one direction only, of spring means connected to said legs and tending to move the same to intermediate vertical positions.

8. In a toy, a body, legs connected to said body for oscillatory pivotal movements and equipped with rollers and means for permitting the rollers to roll in one direction only, means for oscillating the legs simultaneously in reverse directions, and yielding means operative on said legs and tending to move the same toward their intermediate positions.

In testimony whereof I affix my signature.

SIDNEY L. LONG.

01914515 U 350

01914515 U

J. SNEED
5171 TIMBER RACE COURSE

HOLLYWOOD SC 29449

54319100595LETR

KN 3531

Dec. 19, 1933. C. A. WETZELL Des. 91,226

TOY

Filed Sept. 15, 1933

Fig. 1

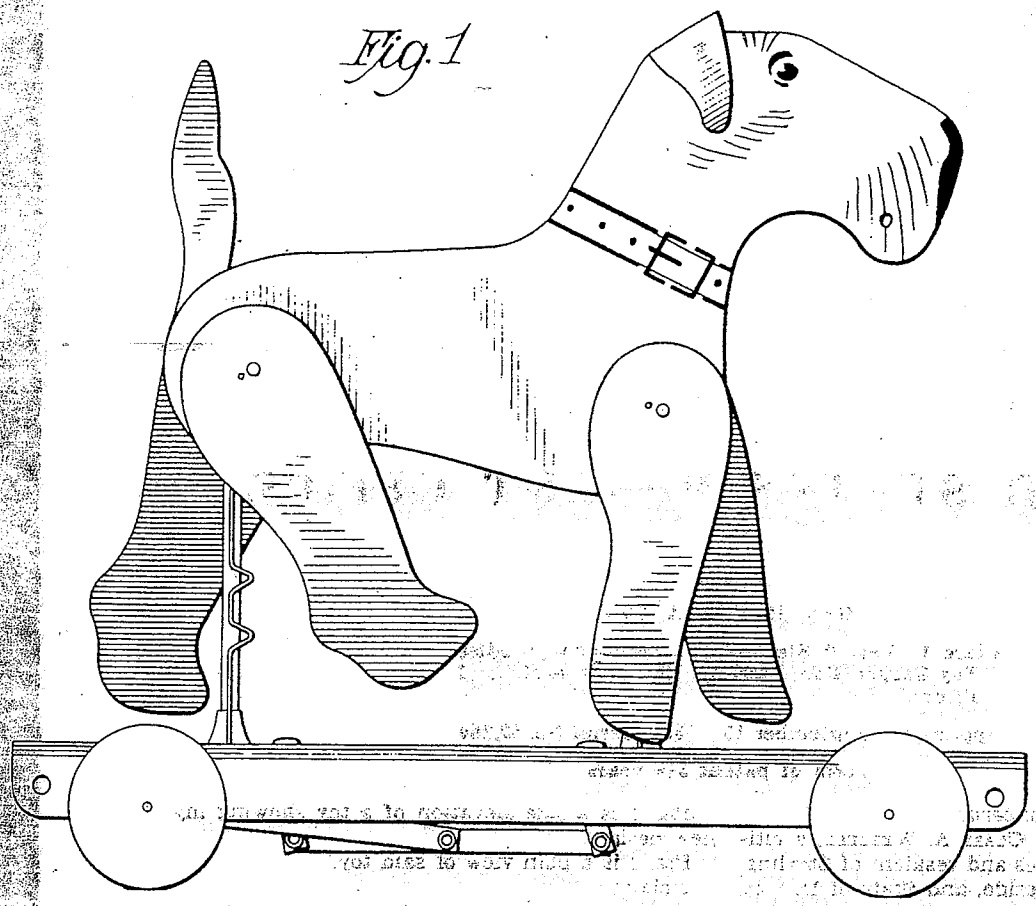
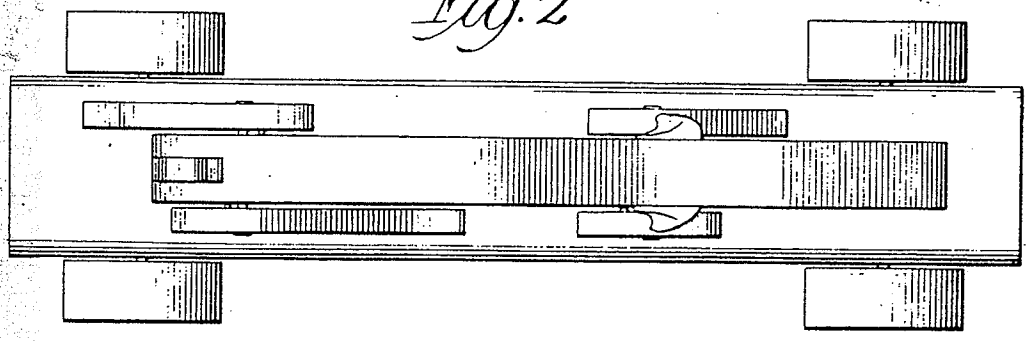


Fig. 2



Inventor
Clare A. Wetzell
By Arthur F. Durand Atty.

Patented Dec. 19, 1933

Des. 91,226

UNITED STATES PATENT OFFICE

91,226

DESIGN FOR A TOY

Clare A. Wetzell, Sterling, Ill., assignor to Hustler Toy Corporation, Sterling, Ill., a corporation of Illinois

Application September 15, 1933, Serial No. 49,260

Term of patent 3½ years

To all whom it may concern:

Be it known that I, CLARE A. WETZELL, a citizen of the United States and resident of Sterling, in the county of Whiteside, and State of Illinois, have invented a new, original, and ornamental Design for a Toy, of which the following is a specification, reference being had to the accompanying drawing forming a part thereof.

Fig. 1 is a side elevation of a toy showing my new design.

Fig. 2 is a plan view of said toy.

I claim:

The ornamental design for a toy, as shown.

CLARE A. WETZELL.

Dec. 19, 1933. C. A. WETZELL Des. 91,227

TOY

Filed Sept. 15, 1933

Fig. 1

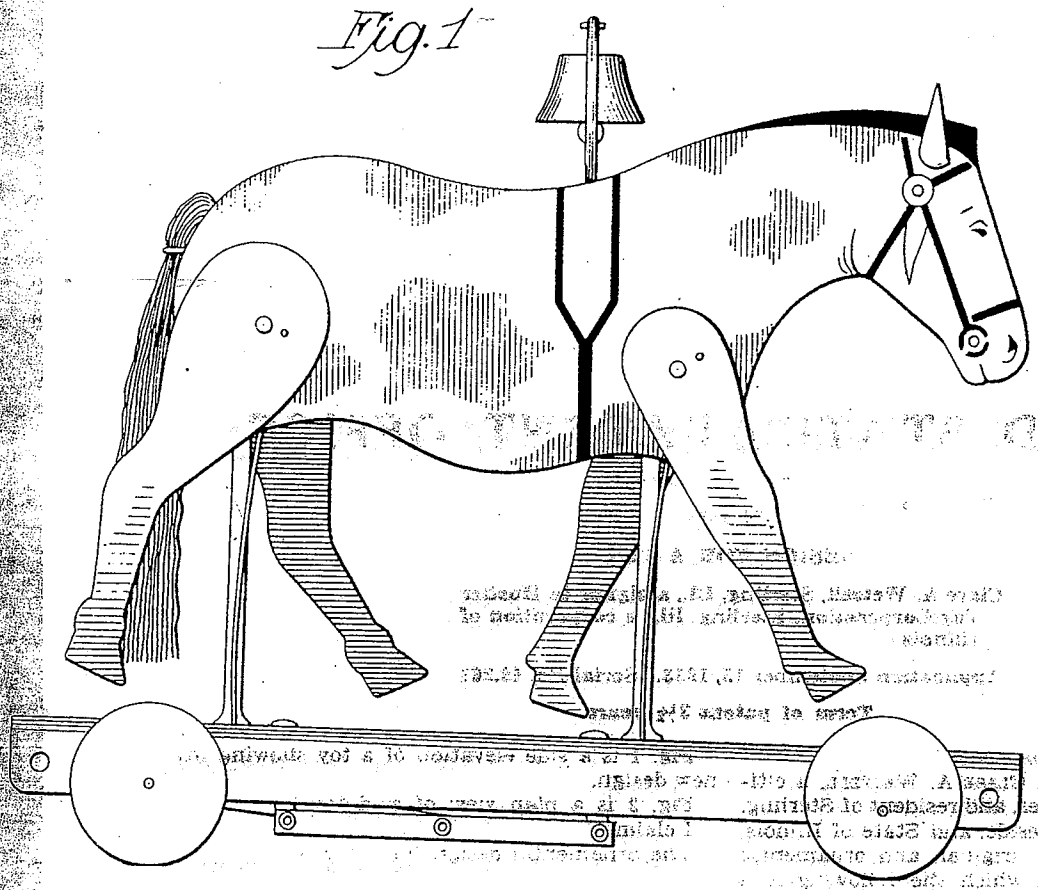
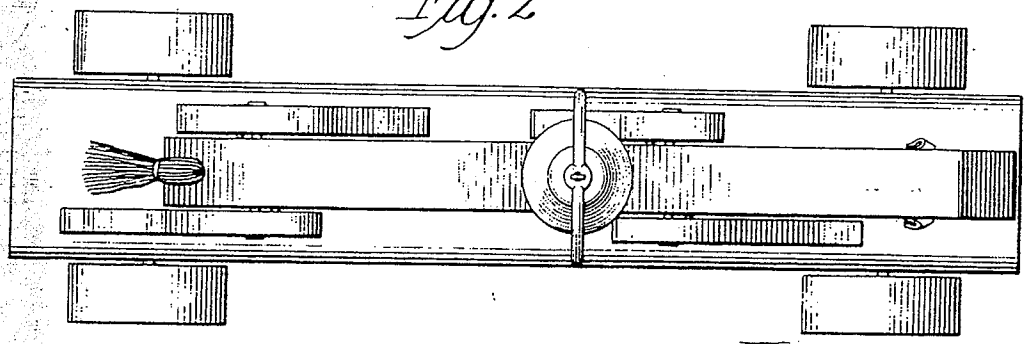


Fig. 2



Inventor:
Clare A. Wetzell
By Arthur F. Durand
Atty.

Patented Dec. 19, 1933

Des. 91,227

UNITED STATES PATENT OFFICE

91,227

DESIGN FOR A TOY

Clare A. Wetzell, Sterling, Ill., assignor to Hustler Toy Corporation, Sterling, Ill., a corporation of Illinois

Application September 15, 1933. Serial No. 49,261

Term of patent 3½ years

To all whom it may concern:

Be it known that I, CLARE A. WETZELL, a citizen of the United States, and resident of Sterling, in the county of Whiteside, and State of Illinois, have invented a new, original, and ornamental Design for a Toy, of which the following is a specification, reference being had to the accompanying drawing forming a part thereof.

Fig. 1 is a side elevation of a toy showing my new design.

Fig. 2 is a plan view of said toy.

I claim:

The ornamental design for a toy, as shown.

CLARE A. WETZELL.