April 15, 1930. R. D. CONBOY 1,754,307

TOY TRACTOR

Filed Aug. 2, 1929

Fig. 1

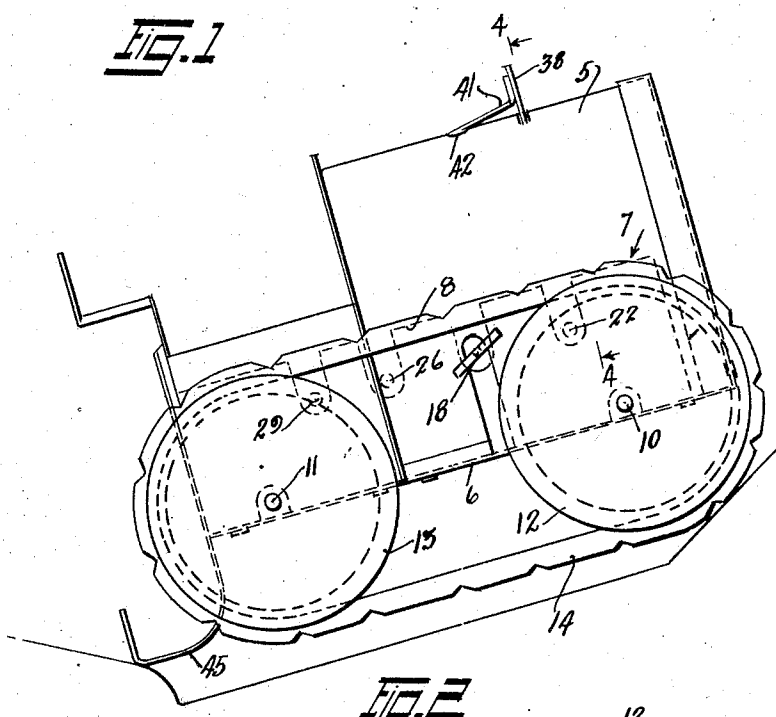


Fig. 5

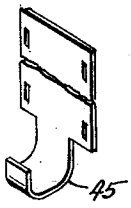


Fig. 2

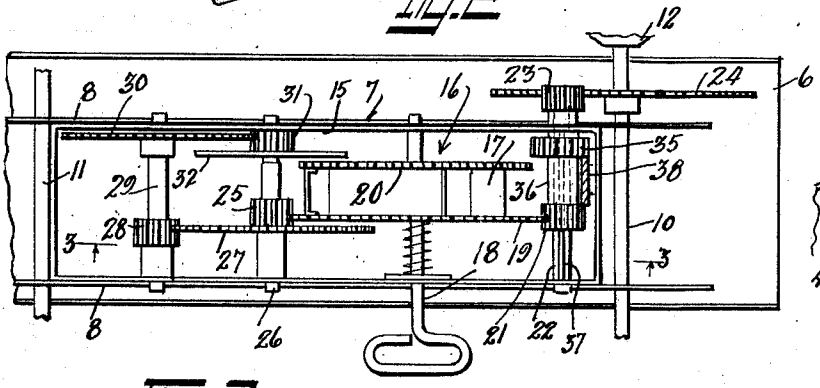


Fig. 4

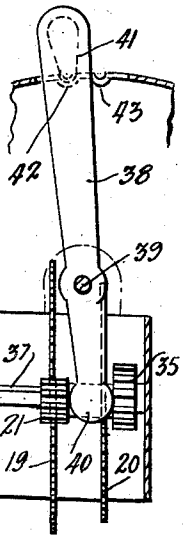
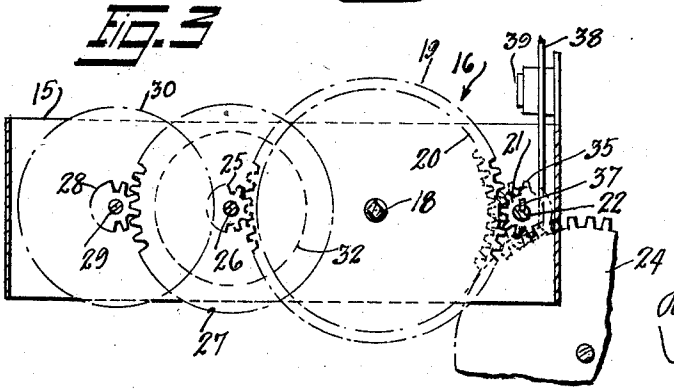


Fig. 3



INVENTOR
Russell D. Conboy
BY
Maurice Block
ATTORNEY

Patented Apr. 15, 1930 1,754,307

UNITED STATES PATENT OFFICE

RUSSELL D. CONBOY, OF WATERBURY, CONNECTICUT, ASSIGNOR TO FERDINAND STRAUSS, INC., OF NEW YORK, N. Y., A CORPORATION OF CONNECTICUT

TOY TRACTOR

Application filed August 2, 1929. Serial No. 382,947.

This invention relates to toy tractors, and has for one of its object the provision of a toy of the character referred to provided with pairs of front and rear wheels, the said wheels being operatively connected by endless soft rubber, serrated traction belts.

Another object of the invention is to provide a toy of this nature, with a governor controlled spring motor operatively connected to the front wheels in such a manner as to transmit the maximum amount of power to the said wheels.

A further object of the invention is to provide the said toy with a rear trailer or projection to help in spanning gaps and prevent the toy from falling over while spanning the said gaps or when climbing steep inclines.

A still further object of the invention is to provide means in a toy of this character by which the speed of its movement can be adjusted.

Another object is to produce a device of the character described in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and correlation of parts herein fully described, and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which, for the purpose of illustration, is shown in the accompanying drawings, in which

Figure 1 is a side view in elevation of my improved toy tractor climbing a hill.

Figure 2 is a top plan view of the motor mechanism.

Figure 3 is a sectional view thereof taken on line 3—3 Fig. 2.

Figure 4 is a sectional view taken on line 4—4 Fig. 1 showing the speed regulating shift mechanism and

Fig. 5 is a perspective view of the rear trailer.

Referring now to the drawings in detail 5 indicates the front or hood portion of the toy removably secured to the bottom or truck floor 6. Also secured to the floor 6 there is a frame 7 in the side walls 8 of which there are journalled the front and rear axles or shafts 10—11 each provided with a pair of wheels 12 and 13 respectively. Each of the wheels 12 is connected to its complementary wheel 13 by means of a serrated, endless, traction belt 14 upon which the toy rests and on which it moves along the ground. I have only shown the wheels and belt on one side of the toy as the wheels and belt on the opposite side are identical.

Suitably secured to the frame 7 there is an inner casing 15 supporting a motor mechanism 16, comprising a power spring 17 one end of which is secured to a winding key shaft 18 and the opposite end to a main drive gear 19 loosely mounted on the said shaft 18. A second drive gear 20 of a smaller diameter than the gear 19 is suitably secured to the said gear 19, the object of which will presently be described. The said gear 19 is normally in mesh with and transfers motion to a pinion 21 keyed to a shaft 22 journalled in the side walls 8 of the casing 7 and provided with a second pinion 23 in mesh with a large gear 24 on the front wheel shaft 10. To the main drive gear 19 there is geared a speed regulating governor comprising a pinion 25 secured to a shaft 26 and in mesh with the gear 19 and having a gear 27 secured thereto which is in mesh with a pinion 28 secured to a shift 29 having secured thereto a gear 30 on the opposite end thereof and in mesh with a pinion 31 having a disk 32 secured

thereto, the said pinion and disk being loosely mounted on the shaft 26.

With the aforementioned arrangement of parts the toy will travel along the ground at a comparatively slow pace when the motor is wound up and will be able to climb very steep inclines as the gears 19 and 24 are comparatively large and are both of the same diameter and the pinions 21 and 23 are likewise of the same diameter but comparatively small thus providing a great increase of leverage between the said pinions and gears. In order that the speed of the toy may be increased if desired when the toy is not required to climb excessively step inclines, I provide a pinion 35 secured by a collar 36 to the pinion 21, the entire structure being slidably mounted on the shaft 22 which is provided with a key 37. This sliding operation is performed by swinging a lever 38 pivotally mounted at 39 and in engagement at its lower end 40 with the sides of the pinion 21 and 35. The lever 38 and the pinions 21 and 35 are maintained in their adjusted positions by means of a detent spring 41 secured to the said lever and in operative alternate engagement with depressions 42 and 43 in the top of the casing 5.

Secured to the rear of the toy there is a trailer or balancing projection 45 which is normally out of engagement with the ground but which contacts therewith and helps to support the toy and prevent same from falling backward when the toy is tilted at a steep angle or when riding off one incline on to another as shown in Fig. 1. This trailer is preferably made of resilient spring metal to prevent same from bending or breaking off.

From the foregoing it will be seen that I have provided a toy tractor in which the maximum amount of power is utilized to propel the toy along steep embankments, the said toy having means for shifting or changing the speed of such propulsion and means for governing the speed of the motor itself. It will also be seen that I have provided ground engaging traction means consisting of endless serrated resilient belts that will positively grip the traveling surface and materially aid the operation of the toy.

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

1. In a toy of the nature described, a spring motor, a set of wheels driven by said motor, a second set of wheels, a pair of serrated resilient ground engaging bands each connecting a wheel of one set with a wheel of the other set, and a resilient trailer at the rear of the toy adapted to support same when the motor driven wheels are engaging the ground and the other set of wheels is off the ground.

2. In a toy of the nature described, a spring motor, a set of wheels driven by said motor, a second set of wheels, a pair of serrated resilient ground engaging bands each connecting a wheel of one set with a wheel of the other set and a resilient trailer at the rear end of the toy to support same when the said toy is spanning a gap.

3. A spring motor propelled vehicle toy, provided with a trailer at the rear end thereof and a resilient extension on the said trailer adapted to support the toy when the said toy is spanning a gap.

4. A spring motor propelled vehicle toy having front and rear ground engaging wheels, and a resilient trailer at the rear end thereof normally out of engagement with the ground adapted to support the toy on a rear embankment while the front wheels are travelling up an incline and the rear wheels are out of engagement with the ground.

5. In combination with a toy tractor, a trailer, comprising a plate secured to the tractor body, and a resilient extension on the said plate extending rearwardly of the body, for the purpose specified.

6. In combination with a toy tractor, a body portion, a rear wall thereon, and a substantially L shaped resilient extension integral with the said wall extending rearwardly thereof and normally out of engagement with the ground for the purpose specified.

In testimony whereof I hereunto affix my signature.

RUSSELL D. CONBOY.