PATENT SPECIFICATION

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362,763

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COMPLETE SPECIFICATION.

Device for Rewinding Clockwork Toys.

I, RENÉ TRUBERT, of 2 & 4, Rue de l'Arsenal, Arras, Pas-de-Calais, France, of French nationality, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of the present invention is to provide a gadget for rewinding the spring mechanism of a toy without using a key, handle, or other means hitherto employed. Up to the present and in most cases when the working of a top stops by the unwinding of the spring, it was necessary to take it in the hands to rewind the clockwork. The apparatus according to the present invention removes this inconvenience by allowing rewinding of the toy without touching it, after which it can continue its movement. It is clear that this gadget will cause the toy to be branded with a particular appearance of reality.

The principal feature of the invention consists in the provision of means forming part of the surface on which the toy is intended to run, such as a shaped strap, to receive the toy, and means for moving said part to cause the mechanism of the toy, to turn in the opposite direction to that of its normal operation whilst the toy is held stationary.

Other features of the invention will appear in the course of the following description taken in conjunction with the accompanying drawing which represents one method of carrying the invention into effect applied by way of example to a toy loco, and in which Fig. 1 is a diagrammatic sectional elevation of the apparatus, Fig. 2 is a plan of Fig. 1 without the loco, Fig. 3 is a cross section of the shaped strap taken on line A B Fig. 2 and showing a wheel in situ, Fig. 4 is a diagrammatic plan of the apparatus when provided with a system for automatically stopping the loco, Figs. 5 and 6 are respectively an elevation and plan of an attachment for the loco which is necessary with the last named system, and Fig. 7 is a detail for use in connection therewith as hereinafter described.

A band 3, of rubber for example, shaped in cross section similarly to the track on which the loco runs, as illustrated in Fig. 3, is mounted on drums 1 and 2. Any number of supporting rollers 4, 5, may also be placed beneath the band. The loco is arranged to arrive on the band 3 with its clockwork almost run down, and to assist it into position the band may be slightly inclined or on a lower level than the track. In this condition the loco stops completely on touching the buffer stop 7. It is then sufficient, in order to rewind the clockwork, to turn the loco wheels in the direction of the arrows *y*, i.e. in the opposite direction to that of their normal working, and according to the invention this is obtained by displacing the band 3 in the direction of the arrow *z*. This is done by rotating one or both drums 1 and 2, either by hand drive or better by an electro motor or the like.

The clockwork being rewound, the loco can continue its motion when the buffer stop 7 is moved out of the way, as for example by rotation about the axis 9 into the dotted position between the rails. A spring 10 is provided engaging with a depression 11 in the buffer block to retain the latter in the raised position, and removal of the stop can be effected by hand by the lever 13 acting through a flexible connection 12. Spring 10 may be replaced by a counterweight. When the clockwork is fully wound and the wheels can no longer be turned, the full driving force of the band 3 pushes the loco against the buffer stop, and the spring 10 may be regulated, according to the invention, so that it holds the buffer against the winding force but yields with this additional force and allows the loco to move the buffer stop out of the way automatically.

The buffer stop 7 may be employed to open the circuit of the electric motor driving the band.

In the arrangement shown in Fig. 4, two pieces 15, 16 of metal, of angle form for example, are placed slightly above the band 3 and are fixed at 17 and 18 so as to be electrically insulated. They are placed substantially parallel to the track and slightly apart. The separation towards the fixing 17 at the arrival end is slightly more than towards the fixing 18 at the end

where the loco departs. Piece 15 is electrically connected to one of the terminals of the motor driving the band and the piece 16 is connected to a source of current.

Figs. 5 and 6 show a V-spring 19 fixed to the loco by an electrically insulating support 20 holding it on that axis of the pieces 15, 16 which is longitudinal with respect to the railway track.

The separation of the two arms of the V is substantially equal to the maximum separation of the pieces 15 and 16. Thus when the loco arrives by the track 6 it engages the band 3 and the V spring is pinched between the pieces 15 and 16, which has the result first of starting the band driving motor then of retarding the progress of the loco and stopping it on the band. It has been found that by adjusting the separation and convergence of the pieces 15 and 16 the loco can be made to stop automatically on the band only if it needs rewinding and depart automatically when it has been wound up.

It should be noted that with the above described device, no part of the toy is in communication with the electric current, and therefore that there is no risk of giving a shock to a child, as the spring 19 is in effect insulated from the loco. Only the pieces 15, 16, are alive, and it is otherwise a simple matter to surround these with insulation of the shape shown in Fig. 7.

Instead of the pieces 15 and 16, according to the invention electro-magnets can be used fed in parallel, or preferably in series, with the motor driving the band 3. A small armature placed under the loco can be made, on passing over the magnets, to complete the circuit and the attraction resulting from the excitation of the magnets would stop the loco.

The means have been described which have been found the most suitable for carrying the invention into effect, but it is intended that modifications can be carried out without departing from the scope of the invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Device for rewinding the spring mechanism of clockwork toys comprising a part of the surface over which the toy is intended to run, means for holding the toy thereon against motion in the direction in which its mechanism drives it, and means for moving said surface-part to cause a movement of the mechanism of the toy in the opposite direction to that in which said mechanism moves in operating the toy.

2. Device as claimed in claim 1 comprising a drum which can be rotated and which is arranged so that a mechanical toy can come on to it in such circumstances that the said rotation will cause rotation of the mechanism of the toy in the opposite direction to that in which said mechanism operates when working the toy.

3. Device as claimed in Claim 1 comprising an endless band adapted to be driven by a system and reproducing the profile of the track followed by a mechanical toy, the said band being arranged in such a way that the said toy can come on it and be stationary there in such circumstances that movement of the band can cause movement of the mechanism of the toy in the opposite direction to that which could produce the said mechanism.

4. Device as claimed in Claim 11 comprising an endless band reproducing the profile of a toy railway track and adapted to be driven by an electric motor, said band being arranged in such a way that a toy loco can come on to it and be stationary there in such conditions that movement of the band can cause rotation of the wheels of the loco in the opposite direction to that which the mechanism of said loco would produce.

5. Device as claimed in Claim 1 comprising an endless band reproducing the profile of a toy railway truck and adapted to be driven by a system, said band being arranged in such a way that a loco can come on to it, in combination with a buffer stop or the like adapted to hold the loco stationary on the band and disappear when the loco must depart.

6. Device as claimed in Claim 1, comprising an endless band reproducing the profile of a toy railway and adapted to be driven by an electric motor, said band being arranged in such a way that a loco can come on to it in combination with two pieces substantially parallel to the axis of said band placed above the latter and converging, whilst a V-formed spring is fixed on the toy loco in such a way as to come between the two said substantially parallel pieces which are electrically connected one with a terminal of a source of current and the other with a terminal of the said electric motor.

Dated this 9th day of February, 1931.

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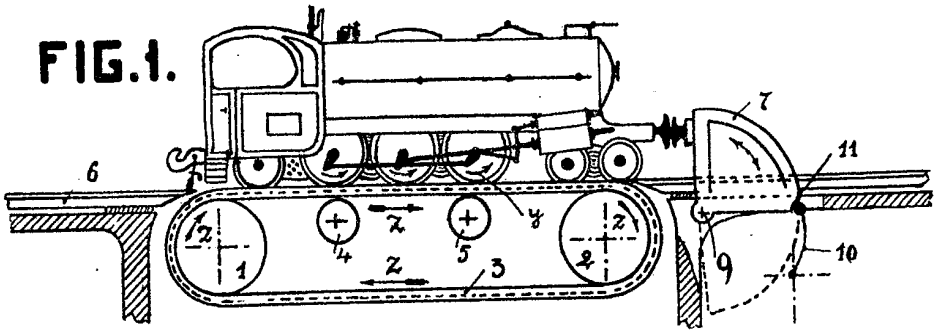
FIG.1.



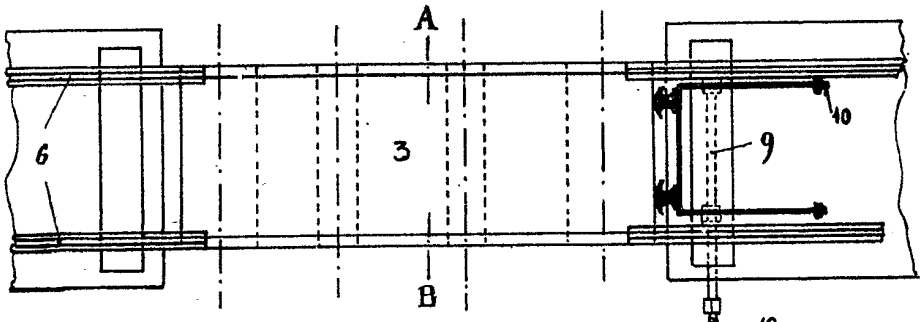


FIG.2.

FIG.5

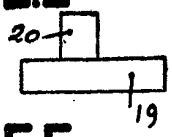


FIG.6.

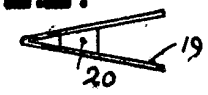


FIG.3

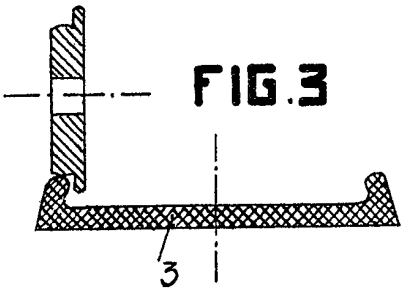


FIG.7.

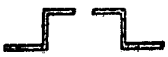
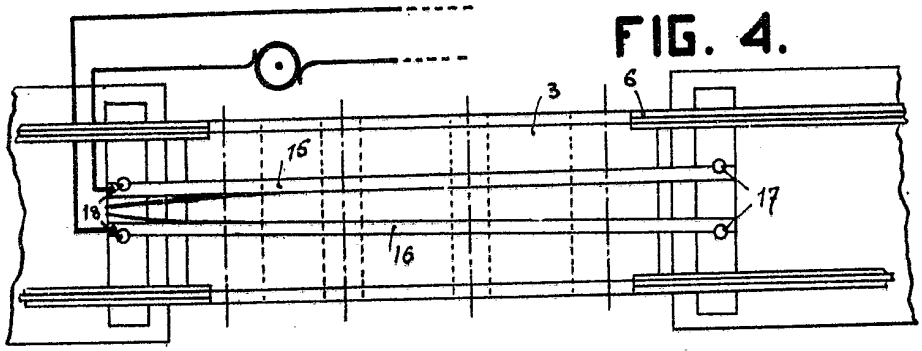


FIG. 4.



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