May 30, 1939. E. HORN 2,160,738

DEVICE FOR WINDING UP SPRING-DRIVEN CLOCKWORKS OF TOY VEHICLES

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Fig. 1

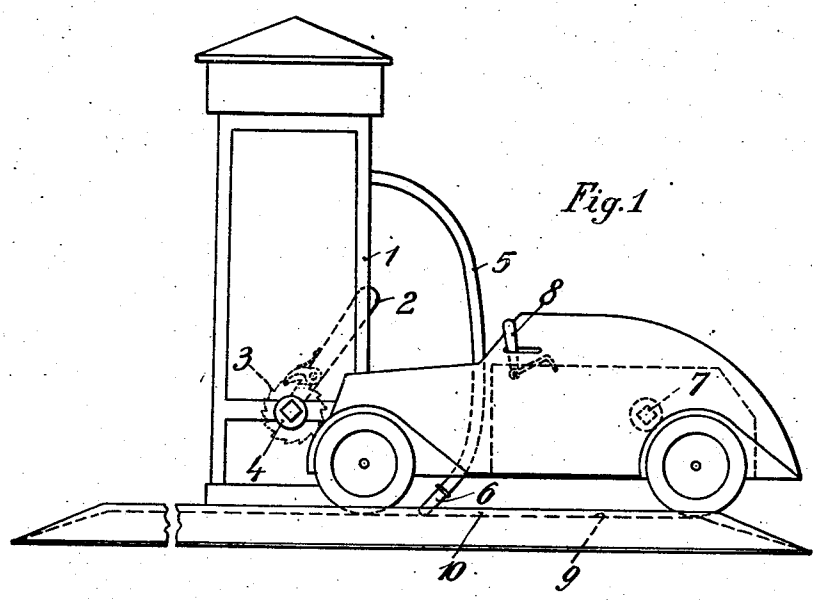
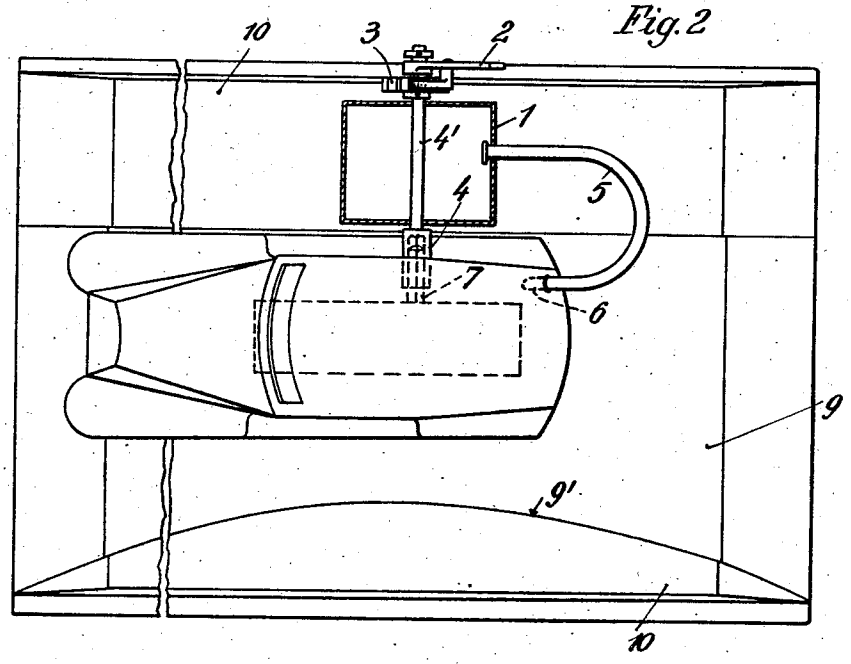


Fig. 2



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Fig. 3

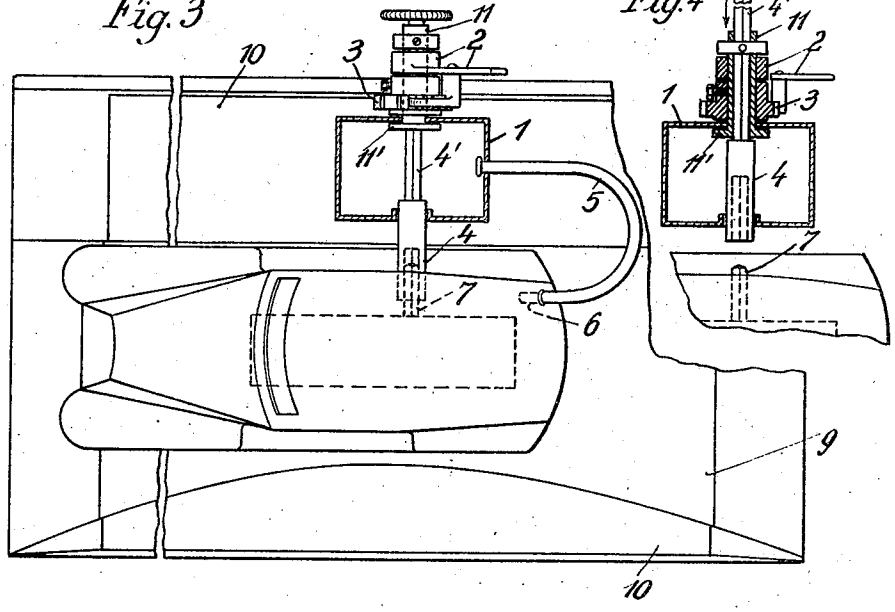


Fig. 4

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DEVICE FOR WINDING UP SPRING-DRIVEN CLOCKWORKS OF TOY VEHICLES

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5 Claims. (Cl. 46—39)

This invention relates to devices for winding-up spring-driven clockworks of toy vehicles and, more particularly, to an arrangement of the kind comprising a device in the form of an independent post or pillar simulating a gasoline supply station or depot with a filling mechanism permitting coupling said toy vehicle with said station or depot in order to wind-up the clockwork of said vehicle from time to time by operating said filling mechanism.

By providing a device of this kind, the enjoyment of play with the toy-vehicle will be considerably enhanced.

In the accompanying drawings I have represented two forms of construction of my new device for winding-up spring-driven clockworks of toy-vehicles, Fig. 1 being a side-view, showing said post or pillar simulating said station or depot and said toy-vehicle not yet coupled with the former. Fig. 2 is a top plan view partly in section showing said post or pillar and said vehicle in coupled condition in order to wind-up the clockwork of the latter. Fig. 3 is a top plan view partly in section illustrating a second form of construction of said post or pillar and showing said toy-vehicle in coupled condition with said post or pillar. Fig. 4 is a horizontal section through said post or pillar with the winding-key in retracted condition, that is in a condition in which the latter is withdrawn from the winding stem of said clockwork.

In either form of construction the device for winding-up the clockwork of the toy-vehicle is constructed in the form of a post-like or pillar-like structure simulating a gasoline supply station.

According to Figs. 1 and 2, the device for winding-up the clockwork of the toy-vehicle consists of the aforesaid post-like structure having a casing 1, a shaft 4' being mounted rotatably therein, said shaft carrying at its front end a key-head 4 and at its rear end a swinging lever 2, both fixed to said shaft 4'. Upon operating said swinging lever 2 a step-by-step rotation may be imparted to said shaft 4' through the medium of a pawl and ratchet-wheel as shown in Fig. 1. The key-head 4 forming part of said shaft 4' is positioned at even height with the winding-stem 7 of the clockwork of the toy-vehicle which, when placed in front of said device, needs to be shifted solely towards the side in order to effect coupling between the winding-stem 7 and the key-head 4, as indicated in Fig. 2. The winding-stem 7 which forms part of the spring-driven clockwork of the toy-vehicle will thus be properly engaged with the key-head 4 on the shaft 4', permitting winding said clockwork by rocking the lever 2.

The post-like structure or casing 1 simulating a gasoline supply station or depot is preferably mounted on a base-plate 10 adapted to serve as a platform for reception of the toy-vehicle, said platform permitting the toy-vehicle to be moved towards said post-like structure or casing 1. In order to facilitate proper connection between said post-like structure or casing 1 and the vehicle as soon as it moves onto said platform, the latter is provided with a depressed track 9 having an outer side-wall of curved conformation.

During the operation of winding-up the spring-driven clockwork of the toy-vehicle by means of the swinging lever 2 and the parts associated therewith, the vehicle may be locked in known manner against travelling motion as by means of a brake lever 8, indicated in Fig. 1.

The second form of construction of my present device for winding-up the spring-driven clockwork of toy-vehicles as shown in Figs. 3 and 4 represents a further improvement as compared with Figs. 1 and 2. The post-like structure or casing 1 forming part of the device is likewise mounted on a base-plate 10, while the shaft 4' together with the key-head 4 is mounted displaceably in axial direction to permit engagement of the key-head 4 with the winding-stem 7 for winding-up the clockwork of the vehicle, as indicated in Fig. 3, or disengagement of said key-head from said winding-stem to release connection between said vehicle and said device as indicated in Fig. 4.

For this purpose the shaft 4' carrying the key-head 4 is preferably of square cross-section and displaceably mounted within a sleeve 11 having a guide flange 11', said sleeve being mounted in an aperture of the wall of said post-like structure or casing 1.

A ratchet-wheel 3 is fixedly mounted on the sleeve 11, while a swinging lever 2 is mounted within said post-like structure or casing 1 permitting rotation of said ratchet-wheel 3 by the intermediary of a pawl associated with said lever 2, as indicated in Figs. 3 and 4. Upon rocking said lever 2, a step-by-step rotation may be imparted to said shaft 4' and said key-head 4 and also to the winding-stem 7 of the clockwork of the toy vehicle.

In both forms of construction of my present device for winding-up the clockwork of toy-vehicles the post-like structure or casing 1 simulating the gasoline supply station or depot may fur-

ther be provided with a flexible cord, hose or the like carrying at its free end a connecting piece 6 which may be inserted into a socket provided on the casing of the toy-vehicle during the operation of winding-up the clockwork, thus more closely simulating the operation of tanking. Upon completion of the operation of winding-up of the clockwork of the toy-vehicle, the connecting piece 6 is removed from the toy-vehicle and the key-head 4 retracted from the winding-stem 7.

With the construction of the device as shown in Fig. 2 the toy-vehicle itself is withdrawn in lateral direction from the key-head 4, while with the construction according to Figs. 3 and 4 the key-head 4 and the shaft 4' are withdrawn from the winding-stem 7 to uncouple the toy-vehicle from the device.

The toy-vehicle may start its travel from the platform 10 immediately upon being disconnected from the device by merely releasing the brake lever 8 which lever forms part of either form of construction of the device as shown in Figs. 1 and 2 and Figs. 3 and 4, respectively.

My present device is furthermore particularly suited to serve as a supplement for toy-vehicles travelling on a toy track, and in particular will permit the operation of winding up the clockwork of the toy-vehicle while standing upon the track, with the result that the process of winding-up the clockwork will not be conspicuous as such but more closely simulate the operation of tanking.

I claim:

1. A device for winding-up the spring-driven clockwork of a toy-vehicle, said device comprising a post-like structure or casing simulating a gasoline supply station, or depot, and mechanism associated with said structure or casing, said mechanism adapted to be connected to or disconnected from the winding-stem of said clockwork.

2. A device as specified by claim 1, said mechanism comprising a shaft mounted rotatably on said structure or casing, a swinging lever, a ratchet-wheel on said shaft, a pawl on said swinging lever in engagement with said ratchet-wheel to impart step-by-step rotation to said shaft upon forward and rearward swinging of said lever, said shaft being provided with a key-head at its free end, said key-head adapted to be engaged with and disengaged from the winding-stem of said clockwork.

3. A device as specified by claim 1, said mechanism comprising a rotatable shaft provided with a key-head, a swinging lever, a pawl-and-ratchet device interposed between said shaft and said lever, and means permitting longitudinal displacement of said shaft with respect to said structure or casing.

4. A device as specified by claim 1, said mechanism comprising a rotatable shaft provided with a key-head, a swinging lever, a pawl-and-ratchet device interposed between said shaft and said lever, and a sleeve carrying said shaft, said swinging lever and said pawl-and-ratchet device mounted within said structure or casing displaceably in longitudinal direction of said shaft to permit withdrawal of said key-head from the winding-stem of the clockwork of the toy-vehicle upon completed winding-up of said clockwork.

5. A device as specified by claim 1, said device including a base-plate associated with said post-like structure, a depressed track on said base-plate adapted for reception of the toy-vehicle, the lateral wall of said track opposite to said post-like structure having a curved conformation permitting a toy-vehicle when travelling on said track to be moved laterally towards said post-like structure and said mechanism associated therewith.

ERNST HORN.