July 22, 1969 A. EINFALT 3,456,382

TOY WITH A TRACK FOR A TOY VEHICLE

Filed Sept. 8, 1966

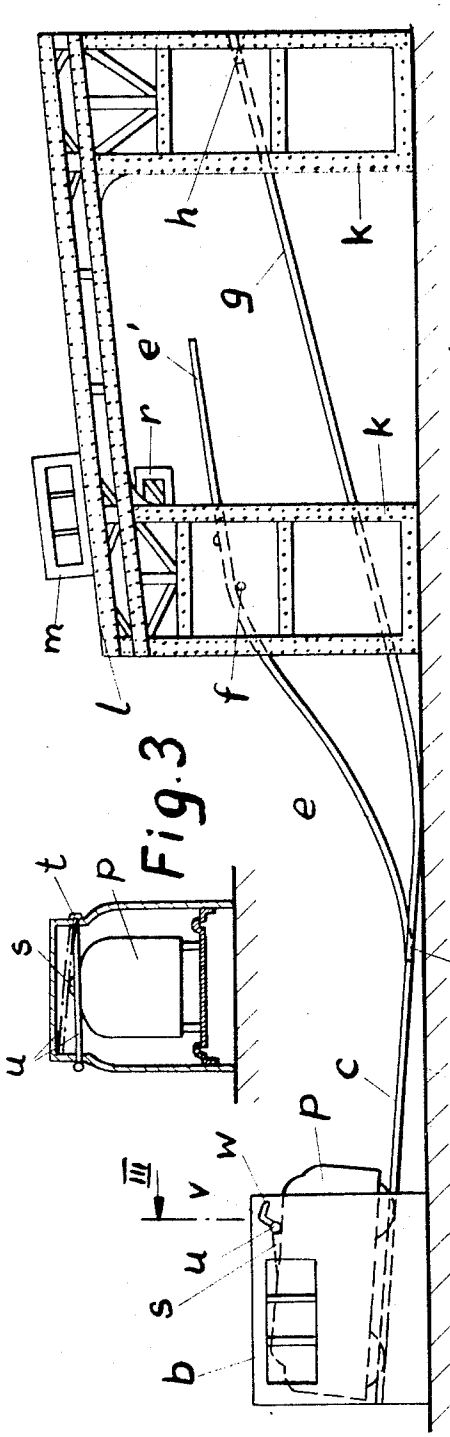


Fig. 3

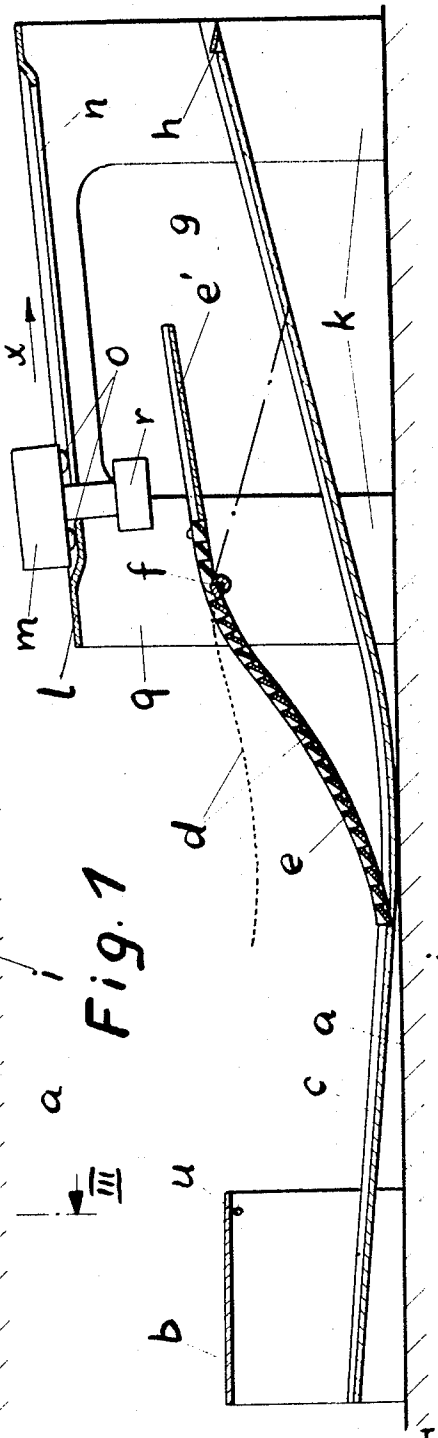


Fig. 1

Fig. 2

INVENTOR
ALFRED EINFALT
BY Hane and Nydick
ATTORNEYS

United States Patent Office 3,456,382 Patented July 22, 1969

3,456,382

TOY WITH A TRACK FOR A TOY VEHICLE

Alfred Einfalt, Nuremberg, Germany, assignor to Gebruder Einfalt, Blechspielwarenfabrik, Nuremberg, Germany, a German firm

Filed Sept. 8, 1966, Ser. No. 578,021
Claims priority, application Germany, Feb. 11, 1966, E 22,913
Int. Cl. A63h 18/06
U.S. Cl. 46—202 1 Claim

ABSTRACT OF THE DISCLOSURE

This disclosure teaches an over and under toy vehicle with cooperating fixed and swingable (rockable) tracks whereby the toy vehicle traverses and swings the swingable track and in so doing moves separately a rigged crab vehicle. The toy vehicle returns under the swingable track to its start position. The crab vehicle is likewise restored to its initial position.

This invention relates to a toy in the form of a fixed track with starting and reversing stations and with a swingable intermediate track for toy vehicles.

The invention has for object the creation of a novel type of toy with a surprising entertainment effect. The toy in question is distinguished by its highly play-stimulating character.

The toy according to the present invention comprises a fixed track which descends from one end thereof to an intermediate point whereafter it ascends to the other end thereof, a start station at said one end of said fixed track, a stop at said other end of said track, supporting means on each side of said fixed track, a swingable track extending on each side of a transverse axle carried by said supporting means, one side of said swingable track having teeth and its end normally contacting said intermediate point of said fixed track, a superstructure with means supporting it above the ascending portion of said fixed track and at least partly above said swingable track, an inclined track in said superstructure, a slot in said inclined track, a toy vehicle movable along said inclined track and having a depending part extending through said slot and into the path of a toy vehicle traversing said swingable track.

The toy gives the child playing with it the impression that the vehicle travels from the start station to an intermediate station, to be loaded there from the other vehicle and then to convey its load through the reversing station back to the station from where it started.

According to a further feature of the invention, the support of the travelling crab is provided on its top with a track, on which the travelling crab can move to and fro. The construction is preferably such, that the travelling crab can be set in motion by the moving toy vehicle. To this end, the travelling crab may be provided with a driver member projecting downwards into the range of movement of the toy vehicle.

According to another feature of the invention, the outward movement of the travelling of the second vehicle is brought about by the impact of the toy vehicle against the driver, while its return movement takes place under the effect of gravitational forces along the decline of its track.

Here, it is advantageous to have the impact of the vehicle against the driver of the second vehicle in the region of the tilting axis of the swingable track section, so the vehicle commences its transport journey so to speak immediately after being loaded. A very simple and functionally reliable construction results when the swingable

track section and the toothed ascending track section form a single piece.

Further according to the invention, the starting station is provided with a device which selectively holds back and releases the vehicle. With this end in view, the starting station may have a catch member cooperating with a catch on the toy vehicle. This lever is advantageously so constructed and arranged, that it can be brought as desired into a lower operative and an upper inoperative position. It can then be so adjusted, that each time the vehicle arrives at the starting station it is held back and must be released by hand, or so that it is not caught, i.e., that the vehicle can start on a new journey automatically after reaching the starting station.

The accompanying drawings illustrate an exemplary embodiment of the invention.

In these drawings:

FIG. 1 shows a side elevation of the toy;

FIG. 2 a corresponding longitudinal section; and

FIG. 3 is a section along the line III—III of FIG. 1.

The toy comprises a start station *b* which forms an end-of-travel stop and is fashioned as a reproduction of a building. This station *b* bridges one end of a fixed vehicle travelling track which extends to the other end of the toy where an end stop *h* is provided. The track portion *c* from the end within the station *b* is constructed with a descending gradient and merges at *i* into the track portion *g* with an ascending gradient leading up to the end stop *h*.

A swingable track *d* which is rockable about a transverse axle *f* has its one portion provided with a rack or teeth *e* and its other portion *e'*, beyond the pivot axis, plain. The two portions of this track *d* may be separate but to facilitate the manufacture and the assembly of the toy, it is preferred to form the toothed section *e* and the plain section *e'* as a single piece. The weights of the portion *e* of this swingable track is greater than its other portion so that it tends to occupy the position shown in FIGS. 1 and 2 when the end of the toothed section *e* contacts the fixed track near the lowermost portion *i* of the descending portion *c* so that now the toothed section forms an ascending gradient. When the swingable track *d* is rocked to maximum possible extent its other end, i.e., the end of its plain portion *e'* contacts the fixed track intermediate the length of the ascending portion *g* as indicated by the chain line.

At the end of the toy remote from the station *b* there is provided a superstructure *l* supported by pillars *k* on opposite sides of the fixed track, such superstructure and the pillars being for example fashioned as a representation of girder work. The superstructure incorporates a recessed track *n* which is inclined substantially as shown. A "travelling crab" or other such simulated vehicle *m*, which is provided with freely rotatable wheels or rollers *o*, can travel to-and-fro along the track *n*. The track *n* has a longitudinal slot through which extends a part depending from the vehicle *m* and carrying the driver *r*.

The toy is used in conjunction with a known form of self-propelled clockwork toy vehicle *p* which has freely rotatable travelling wheels and a driving toothed wheel which is set in operation on engaging a rack or toothed track. This vehicle is provided on its roof or top portion with a projection catch lug *s*.

The start station *b* is provided with a vehicle latch comprising a latch member *u* hinged at *t* to one side of the station and extending through a slot *v* in the other side of the station for convenient digital operation. As the vehicle *p* passes the latch member *u* its lug *s* lifts the member *u* which thereafter falls, into the position shown in FIG. 1, to lock with the lug *s* to prevent return movement of the vehicle, due to the slope of the fixed portion *c*, until the member *u* is lifted by hand. The slot *v* may,

as shown, be formed with a side-slot *w* extending laterally of the slot *v* so that the member *u* may be moved into side-slot *w* in which it positioned clear of the lug *s* of the vehicle *p*. The vehicle *p* can automatically commence its next journey owing to the impact with the end stop at the station *b* and reversing effect due to the incline of the track portion *c*.

In playing with the toy, a child places the vehicle *p*, with its clockwork motor wound up, in the station *b*, so that it is held by the latch member *u*. On the child lifting the member *u*, the vehicle *p* starts to descend the track portion *c* due to gravity and on reaching the portion *i* thereof runs onto the toothed portion *e* of the swingable track *d*. The motor then drives the driving toothed wheel to cause the vehicle *p* to ascend the track portion *e* and pass onto the track portion *e'*. The weight of the vehicle *p* now causes the swingable track to rock into its alternative position and the vehicle *p* runs onto the portion *g* of the fixed track. On the vehicle leaving the portion *e'* the swingable track *d* rocks back automatically into its initial position. The vehicle travels the rest of the way along the fixed track until it hits the end stop *h*. Due to such impact and inclination of the track portion *g* the vehicle travels down the track portion *g* with gathering momentum, passes under the swingable track *d* which it rocks in passing, and returns to the start station *b* where it held or allowed to start another journey according to the position of the latch member *u*.

During the initial travel of the vehicle after traversing the toothed portion *e* of the track *d*, the vehicle collides with the driver *r* of the vehicle *m* and causes such vehicle to travel along its track *n* towards the other end thereof, as indicated by the arrow *x*. During the time the vehicle *p* is travelling on the fixed track, the vehicle *m* due to the inclination of its track *n* returns to its initial position at the end of its track ready again to be struck and caused to move by the travelling vehicle *p*.

I claim:

1. An over and under toy comprising a vehicle provided with a mechanism to drive a toothed gear, a fixed track which descends from a first end to an intermediate portion whereafter it ascends to a second end thereof, a start station located at said first end and provided with catching means for catching and holding the vehicle, release means operatively connected with said catching means for manually releasing said vehicle, supporting means disposed on both sides of said fixed track, an axle positioned transverse to said fixed track and carried by said supporting means, a swingable track aligned longitudinally relative said fixed track and rotatably connected about said axle and having a toothed end projecting toward said first end and further having a back end projecting toward said second end, said swingable track rotatable from a normal position wherein said toothed end contacts said intermediate portion whereby said vehicle can ride up said toothed end to an abnormal position wherein said back end contacts said second end for passage of said vehicle thereto, said toothed end heavier than said back end so that said swingable track remains in said normal position until the weight of said vehicle rotates it to said abnormal position and whereby on passage of said vehicle from said back end to said second end said swingable track returns to said normal position, a stop means at said second end and organized to stop said vehicle, said second end higher than said first end whereby said vehicle returns under gravity from said stop means to said start station moving said toothed end upward for passage thereunder, a superstructure aligned with said fixed track and having means supporting it above said second end and at least partly above said switchable track, an auxiliary track mounted on said superstructure and inclined upward toward said second end, a crab vehicle mounted on said auxiliary track and having a portion depending into the path of said first-mentioned vehicle as said first-mentioned vehicle travels said switchable track whereby said crab vehicle is moved up said auxiliary track by said first-mentioned vehicle.

References Cited

FOREIGN PATENTS

888,890 1962 Great Britain.

LOUIS G. MANCENE, Primary Examiner

CHARLES R. WENTZEL, Assistant Examiner