

J. C. TURNER,
TOY.
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Fig. 1

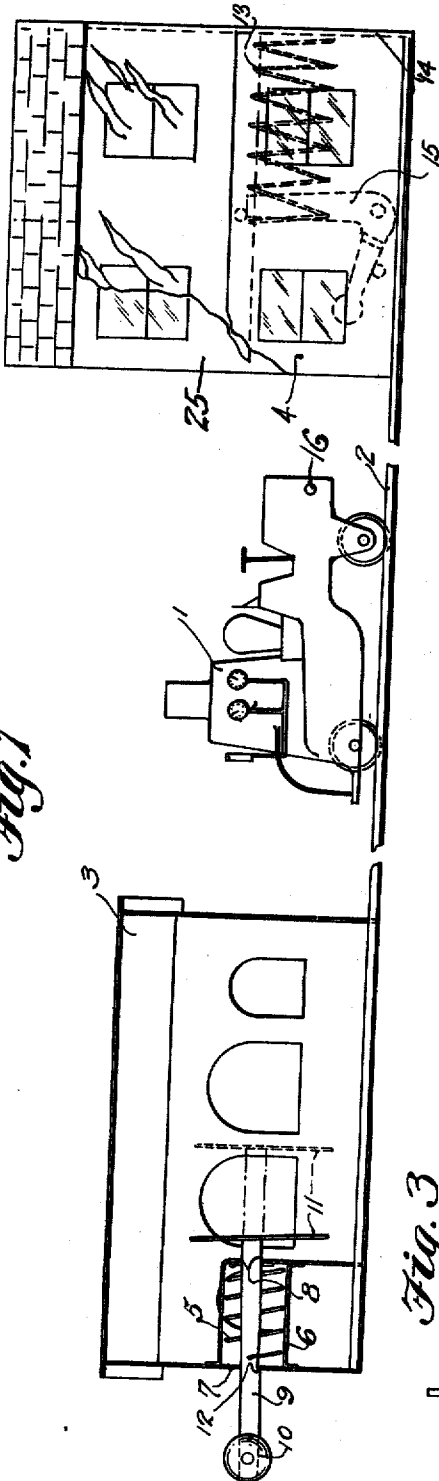


Fig. 2

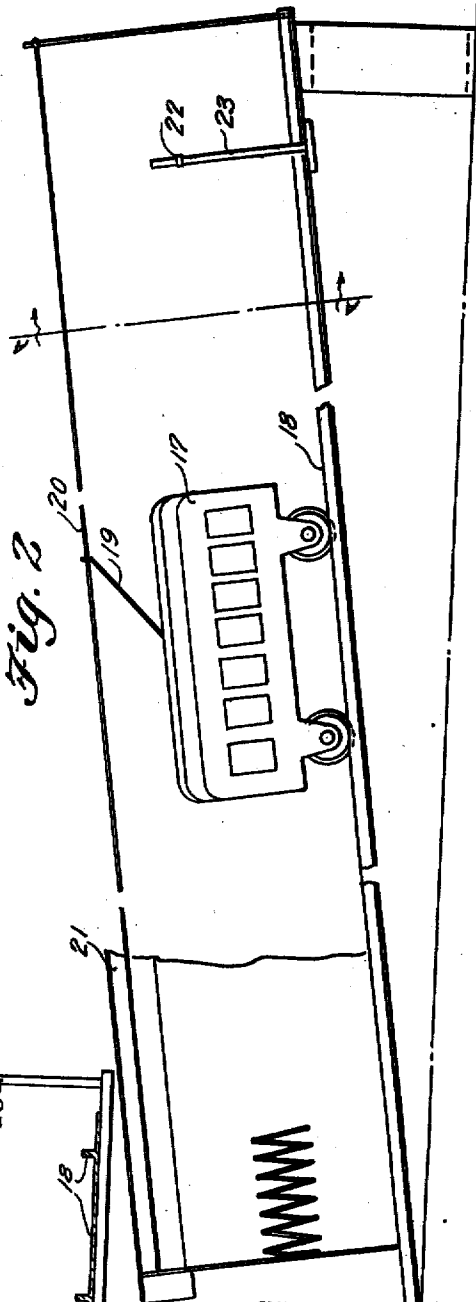
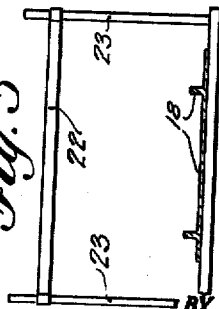


Fig. 3



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TOY.

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To all whom it may concern:

Be it known that I, JOHN C. TURNER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Toys, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to toys and the object of the invention is to provide an apparatus whereby movement may be imparted to a traveling toy, and the toy caused to automatically return to its starting point.

15 It is also an object of the invention to provide such an apparatus with means controlled in part by the toy for causing said traveling movement to be repeated indefinitely.

20 It is also an object of the invention to provide such a device which will be very simple in its construction and operation, and which can be manufactured to sell at a low price.

In the accompanying drawings, Figure 1, 25 is a side elevation, partly broken away, of an apparatus embodying my invention; Fig. 2 is a similar view of a modified form of the invention; and Fig. 3 is a sectional view taken on the line A—A of Fig. 2.

30 In these drawings I have shown a toy embodying my invention, with a slight modification thereof, but it will be understood that the apparatus here shown has been chosen for the purpose of illustration only, and that toys of various kinds may be employed, and that the various parts of the apparatus may be changed without departing from the spirit of invention.

In Fig. 1 I have shown a traveling toy 40 which is in the form of a fire engine, as shown at 1. This toy may, if desired, be mounted on a track in order that it may be better guided in its travel, and I have here shown the same as traveling on a track 45 2, which may be of any suitable character to guide the toy. The toy is adapted to travel between two stations, which are here shown as arranged at the ends of the track, and the one station is made to represent an engine house 3, from which the toy fire engine is projected toward the remote station, which may be shown in the form of a burning house, as indicated at 4. At the initial station, that is, the point from which the toy 50 begins its movement, I have provided means for projecting the toy, which may take any

suitable form, but preferably it comprises a resilient device which may be placed under tension and then released to act upon the toy, thus causing the latter to travel away 60 from the station and toward the remote station. The resilient device may take any suitable form but preferably consists of a spring which may or may not be provided with controlling devices. This spring is 65 shown at 5, and is mounted within a housing 6, rigidly supported at the initial station, the housing being in the present instance secured to the end wall of the structure or engine house 3, which in turn is rigidly secured to the end section of the track 2. The end walls of the housing 6 are provided with openings 7 and 8, in which is mounted a plunger 9, and which constitute a guide for that plunger. The plunger projects beyond 75 both ends of the housing and is provided at its rear end with a portion 10, by means of which it may be retracted to place the spring 5 under tension. In the present arrangement, an expansion spring is used and is 80 connected at one end with the forward end of the housing 6, and at its other end with the plunger 9, and will be expanded by the retraction of the plunger. At the forward end the plunger is provided with a head 85 to engage the toy, and in the present construction this head is in the form of a plate 11 rigidly secured to the plunger 9 and extending transversely thereto. I also prefer to provide means for retaining the plunger 90 in its retracted position, and as shown, it is provided in its lower edge with a notch 12, arranged to engage the wall of the housing at the lower side of the opening. The openings 7 and 8 are so arranged with relation 95 one to the other, that when the notched portion of the plunger is in engagement with the wall of the housing, the plunger will be slightly inclined, and the edge of the wall about the forward opening 8 forms a fulcrum about which the plunger pivots, consequently, the head or plate 11 will be tilted slightly from a vertical position so that its lower edge will project in front of its upper edge, thus the plunger and its head constitutes in effect a bell-crank lever which is 105 pivoted in the opening 8. If the toy is moved into engagement with the head 11 when the plunger is in its retracted position, it will tend to rock the plunger about its 110 fulcrum and disengage the notched portion thereof from the wall of the housing, thus

releasing the plunger and permitting it to be moved forwardly by the spring, and this forward movement will act upon the toy to project the same toward the other station. It will be obvious, of course, that the plunger can be released manually when desired.

Arranged at the remote station, or opposite end of the track, are suitable means for checking the forward movement of the toy and imparting return movement thereto. This device comprises a resilient member, such as a spring 13, which is mounted on a fixed support 14 and is arranged in the path of the toy. When the toy engages this resilient member, the latter will yield until the momentum of the toy is overcome, and will then expand and project the toy toward the initial station or starting point. Thus by first retracting the plunger, then placing the toy in a position adjacent thereto and releasing the plunger, the toy may be caused to travel from one station to the other, and to be returned to its starting point. If during the travel of the toy the plunger is again retracted, the toy will on its return movement engage the head 11 of the plunger and act upon the same to release the plunger, thereby causing the toy to be again projected toward the remote station and to be returned to the initial station. This reciprocating movement of the toy may be repeated as often as is desired, and the only action on part of the operator necessary to maintain continuous reciprocating movement of the toy is the retraction of the plunger 9, after the toy has been projected and before it has returned to its starting point.

In that form of the device shown in Fig. 1, where the toy is in the form of a fire engine, I have shown the remote station as representing a house and as comprising a movable part or plate 25 which may be painted or otherwise caused to represent flames or smoke, and which may be supported in an exposed position, and when in that position the house will appear to be on fire. This plate is preferably supported by a movable detent 15, which has a part arranged to be engaged by a part of the toy, such as pin 16, as the toy approaches the end of its forward movement, and preferably during the compression of the resilient member. When this trip member is actuated by the toy, the wall or movable part of the house is released and permitted to drop out of sight. With such an arrangement, the toy fire engine may be projected from the engine house toward the burning building, and upon its arrival will cause the movable wall to be lowered, thus giving the appearance of extinguishing the fire, and will then be returned to the engine house. It will be understood that the term "station" as used herein, is intended to designate merely the limits of movement of the toy, and does not necessarily imply the pres-

ence of a housing or inclosing structure of any kind.

The toy may of course take various forms, and the projecting and returning devices may be changed both in appearance and in operation.

In Fig. 2 I have shown another form of the apparatus in which the toy is in the form of a street car 17, traveling on a track 18, and having a trolley pole 19, which travels along a trolley wire 20. If desired, a house or receiving structure, such as is shown at 21, may be provided at one or both stations. As here shown, the projecting device is in the form of a spring which may be compressed by pressing the toy car against the same, and, when the car is released, this spring will project the car toward the other end of the track. The returning device at said other end of the track may be of any suitable character, and as here shown it consists merely of a strip of rubber or other elastic material 22, which extends across the track between uprights 23 and is arranged in the path of the car. The action of this strip of rubber will be the same as the action of the spring returning device, shown in Fig. 1.

A similar result may be secured by mounting the track on an incline so that the toy, when projected from the initial station, will ascend the incline and will be returned to its starting point by gravity. With this arrangement, the resilient device may be omitted all together, if desired, and the incline in itself will constitute means for returning the toy. However, I have in Fig. 2 shown the incline track as provided with a resilient returning device, which may be used or omitted, as same may seem desirable.

While I have shown both forms of the toy with tracks to guide the same from one position to the other, it is not essential that a track should be used. Any means may be provided for accomplishing this purpose. For example, the trolley pole 19 could easily be caused to provide all the guidance necessary. Further, it is not necessary under many conditions to provide a guide of any kind, as the projecting and returning device may be so arranged with relation one to the other that the one will travel without guiding means from the one to the other. Further, it will be apparent that the idea of work accomplished by the toy at the outer end of its movement, that is, the lowering of the movable plate to give the impression of extinguishing the fire, may take a great many forms. Moreover, it will be apparent that the several parts of the apparatus illustrated in the two forms here shown, may be combined or adjusted one with the other in various ways.

While I have shown and described certain embodiments of the invention, I wish it to be understood that I do not desire to be

limited to the details of construction as various modifications will occur to a person skilled in the art.

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

1. The combination with a toy adapted to travel back and forth from one station to another, of a device at one of said stations to project said toy toward the other station, and means at said other station to automatically cause said toy to return to the first mentioned station.
2. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, and means at said other station to cause said toy to return to the first mentioned station, said projecting device comprising means operable by said toy upon its return movement to cause the toy to be again projected toward the said other station.
3. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, and a resilient device at said other station arranged to check the movement of said toy and to automatically impart a return movement thereto.
4. The combination with a toy adapted to travel from one station to another, of a projecting device at one of said stations comprising a resilient member, means to place said resilient member under tension and to release the same to permit it to project said toy toward the other station, and a resilient device at said other station to automatically impart return movement to said toy.
5. The combination with a toy adapted to travel from one station to another, a plunger slidably mounted at one of said stations and adapted to act on said toy, a spring arranged to move said plunger in a direction to act on said toy, said plunger having means to retain said spring under tension, and a head carried by said plunger and adapted to be engaged by said toy to release said spring.
6. The combination with a toy adapted to travel from one station to another, of a plunger slidably mounted at one of said stations, a spring to act on said plunger to cause it to engage said toy, means for co-operating with said plunger to retain said spring under tension, and other means arranged to be acted upon by said toy to release said spring and permit said plunger to be actuated.
7. The combination with a toy adapted to travel from one station to another, of a housing at one of said stations having a guideway therein, a plunger slidably mounted in said guideway, a spring arranged in said housing and connected with said plunger to impart forward movement thereto, said plunger having a part co-operating with the wall of said housing to retain said spring under tension and a part arranged to be engaged by said toy to disengage said plunger from said housing and release said spring.
8. The combination with a toy adapted to travel from one station to another, of a housing at one of said stations having openings therein, a plunger slidably mounted in said openings and having a limited pivotal movement in one of said openings, a spring arranged within said housing to act upon said plunger, said plunger having a notch in one edge thereof adapted to engage the wall of said housing and a head carried by the said plunger and adapted to be tilted when said plunger is moved to cause the notched portion thereof to engage the wall of said housing whereby the impact of said toy against said tilted head, will release said plunger.
9. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, and a spring supported at said other station and arranged to be compressed by the forward movement of said toy and to then expand to impart return movement to said toy.
10. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, means to cause said toy to be returned to the first mentioned station, and an operable part arranged at said other station to be actuated by said toy.
11. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, means to cause said toy to be returned to the first mentioned station, a structure arranged at said other station, and having a part adapted to be moved into different positions, and means controlled by said toy for retaining said movable part in a predetermined position.
12. The combination with a toy adapted to travel from one station to another, of a device at one of said stations to project said toy toward the other station, means to cause said toy to be returned to the first mentioned station, a structure at said other station having a part adapted to be moved into different positions, and means for retaining said movable part in a predetermined position and arranged to be actuated by said toy to release said part and permit it to move into another position.
13. The combination with a toy fire engine and engine house to receive said engine, of

a projecting device arranged within said engine house, a structure representing a building arranged at a point remote from said engine house and having movable wall, means for causing said projecting device to project said fire engine toward said structure, means actuated by said fire engine to cause said movable wall to move from one position to another, and means to cause said fire engine to return to said engine house.

14. The combination with a toy adapted to travel from one station to another, of means for guiding said toy between said stations, a device at one of said stations to project said toy toward the other station, and a resilient device at said other station to check the movement of said toy and automatically return it to the first mentioned station.

15. The combination with a toy adapted to travel from one station to another, of a resilient device arranged at one of said stations, and adapted to be placed under tension and then released to project said toy to-

ward the other station, and means at said other station for automatically causing said toy to return to the first mentioned station.

16. The combination with a toy adapted to travel from one station to another, and a track having an inclined portion arranged between said stations, of a device at one of said stations to project said toy along said track and up said incline, said incline serving to return said toy to the station from which it was projected.

17. The combination with a toy adapted to travel from one station to another, and a track having an inclined portion arranged between said stations, of a device at one of said stations to project said toy along said track and up said incline, and means at the upper end of said incline to check the movement of said toy and automatically cause it to move down said incline.

In testimony whereof, I affix my signature hereto.

JOHN C. TURNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."