(No Model.)

W. CROSWELL.

MECHANICAL TOY.

No. 346,092. Patented July 27, 1886.

Fig. 1.

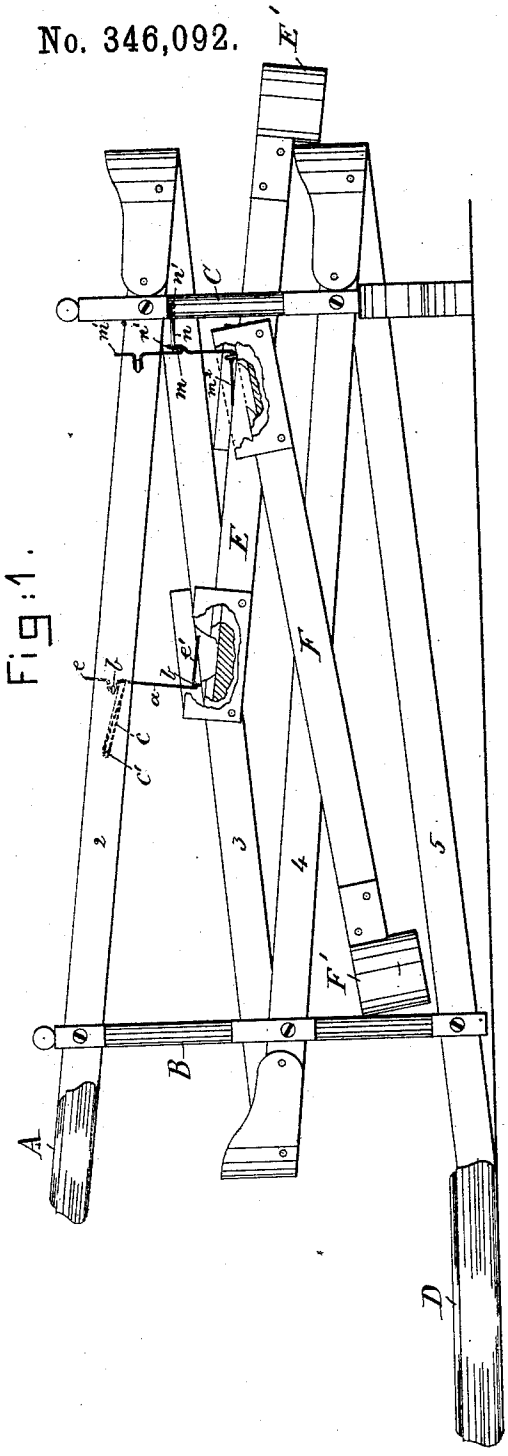
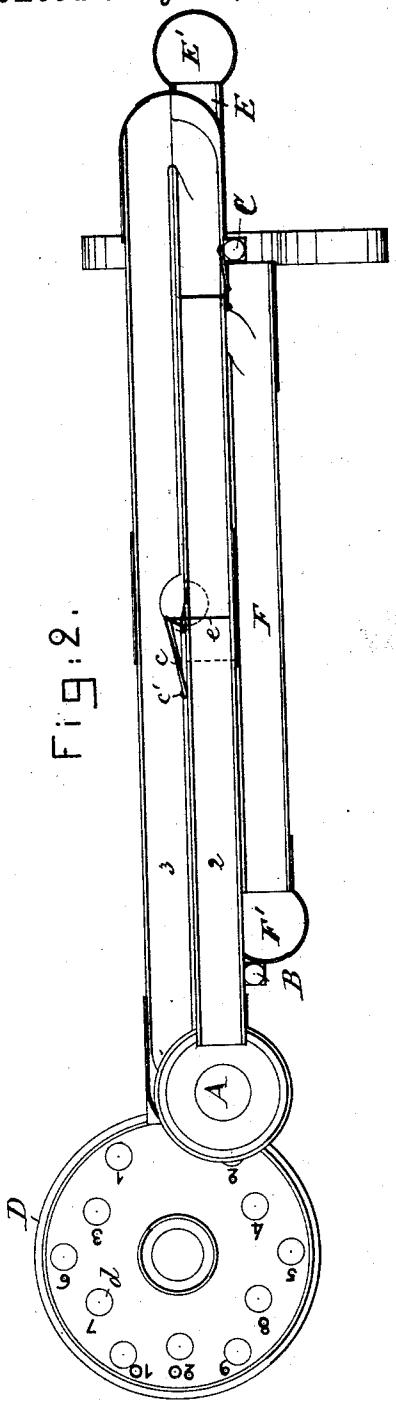


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM CROSWELL, OF BOSTON, MASSACHUSETTS.

MECHANICAL TOY.

SPECIFICATION forming part of Letters Patent No. 346,092, dated July 27, 1886.

Application filed August 31, 1885. Serial No. 175,753. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CROSWELL, of Boston, county of Suffolk and State of Massachusetts, have invented an Improvement in Mechanical Toys, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of the mechanical toy commercially termed a "marble-railway," whereby skill may be exercised on the part of the operator and the toy made more interesting.

The invention consists in the combination, with a track or guideway and one or more supplemental guideways or tracks leading therefrom or from each other, of one or more spring-controlled switches having arms at right angles to each other, one of which arms crosses the guideway at one point and another of which controls the passage to the supplemental guideway leading either from the main guideway or from another supplemental guideway at a distant point, said switches being operated by a marble or like rolling device passing along the guideway and striking the arm of the switch which crosses it, thereby momentarily opening the passage to another guideway, which is controlled by the other arm of the said switch, as I will now proceed to set forth more in detail, and hereafter claim.

Figure 1 shows in side elevation a marble-railway of ordinary construction, provided with supplemental tracks and switches in accordance with this invention, and Fig. 2 a top view thereof.

The starting-point or goal A, an inclined guideway or track leading therefrom, herein shown as composed of the ways 2 3 4 5, joined together at their opposite ends to form a continuous guideway, the uprights B C, to which they are attached, and the home-platen or goal D, provided with concavities *d*, to receive the marble, are as common in the marble-railway commonly found in toy-shops. An automatic switch is interposed between the ways 2 3 of the track, and is herein shown as composed of wire, having the upright portion *a* pivoted to turn freely in the eyes *b*, and controlled as to its movement by a spring, *c*, herein shown as a rubber band passed around the upright *a* and connected to the way 2 by a pin, *c'*. The upright *a* is bent at opposite ends at right angles, as at *e e'*, the said portions *e e'* co-operating with the ways 2 3, respectively, and being also turned at right angles to each other, the portion *e* obstructing the passage of the marble along the way 2, while it leaves the passage for the marble along the way 3 open.

As a marble is rolled along the way 2 it strikes the portion *e*, turning the switch against the tension of the weak spring or rubber band, the marble then passing onward. Another marble is then started, and if proper skill is exercised the second marble will strike the portion *e* of the switch, opening the same at the time that the first marble advances to the portion *e'* of the switch, and the switch being opened by the second marble of the way 2, the further progress of the first marble along the way 3 is impeded, the first marble being rolled by its inertia out of the way 3 into a supplemental way, E, leading from the way 3 at this particular point. Should not the proper skill be exercised and the switch not operated by a second marble at the proper time to impede the first marble and cause it to enter the supplemental way E, the said first marble will continue on the main track and enter the goal D.

The supplemental way E is herein shown as provided with a pocket, E', to receive the marble.

To further render the game more interesting and cause a greater amount of skill to be exercised, a second switch is interposed between the way 2 and the supplemental way E, said switch being composed of the upright portion *m*, having the right-angle portions *m' m²* leading therefrom at opposite ends and normally controlled by a weak-spring, *n*, attached to the upright *c* by a pin, *n'*, and also passing over a hooked portion, *n²*, of the upright portion *m*. The said switch being of similar construction to the first-named switch, is also similarly operated, viz: A marble is rolled along the way 2, opening both switches against the tension of the weak springs in its passage, the switches being at once normally returned by the springs. A second marble is started, and with proper skill may be made to open the first switch at the time the first marble advances to the corresponding portion of the same switch in the way 3, so that as the

switch is turned by the second marble the way 3 is obstructed and the first marble turned to follow in the supplemental way E, both marbles then proceeding in their course. The second marble, if required skill be exercised in its speed, will turn the second switch, thereby obstructing the way E at the moment the first marble has arrived at that particular point, so that the first marble is turned out of the way E into the supplemental way F, leading from the supplemental way E.

The supplemental way F is provided with a pocket, F', corresponding to the pocket E' of the way E, to receive the marbles.

In playing the game, the first supplemental way, E, may call for a prize, and the second supplemental way, F, may call for a double prize, as great skill is required to control the passage of a marble along both ways.

It is obvious that the switches may be interposed between the guideway and supplemental way at different points without departing from my invention.

I am aware that in cash-carrier systems, so called, switches have been employed for turning a car or parcel-holder from the main to a side track; but in order to operate such switches the car or parcel-holder has been provided with a trip, which is set by the starter to operate the switch-lever of the switch which it is desired to send the car over. In my device the marble is "switched" solely by the skill of the player in so timing the arrival of his second marble at the near switch-member as to close it and open the far switch-member opening into the "switch-track," to let the first marble enter said switch-track. Now, in all the cash-carrier systems with which I am acquainted each car or parcel-holder operates the switch for itself to enter the switch-track and not for another preceding or following car, each car traveling entirely independently of the other, and having its trip mechanism set to operate the desired switch, and it only.

I claim—

1. The combination, with a main guideway or track and one or more supplemental guideways or tracks leading therefrom or from each other, of one or more spring-controlled switches having arms at right angles to each other, one of which arms crosses the guideway at one point and another of which controls the passage to the supplemental guideway leading either from the main guideway or from another supplemental guideway at a distant point, said switches being operated by a marble or equivalent passing along the guideway and striking the arm of the switch which crosses it, thereby momentarily opening the passage to another guideway, which is controlled by the other arm of the said switch, substantially as described.

2. The goal A, inclined guideways 2 3 4 5, and goal D, combined with one or more supplemental guideways, as E F, leading therefrom or from each other, and spring-controlled switches having arms at right angles to each other, one of which arms controls the entrance to said supplemental guideway and another of which crosses the path of a marble or equivalent running from the goal A, so that when struck by the said marble or equivalent it will throw aside the arm controlling the entrance to the supplemental guideway, which is thereby momentarily opened, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM CROSWELL.

Witnesses:

F. L. EMERY.

C. M. CONE.