

No. 729,765.

PATENTED JUNE 2, 1903.

H. C. IVES.  
TOY LOCOMOTIVE.  
APPLICATION FILED JULY 23, 1902.

NO MODEL.

Fig. 1.

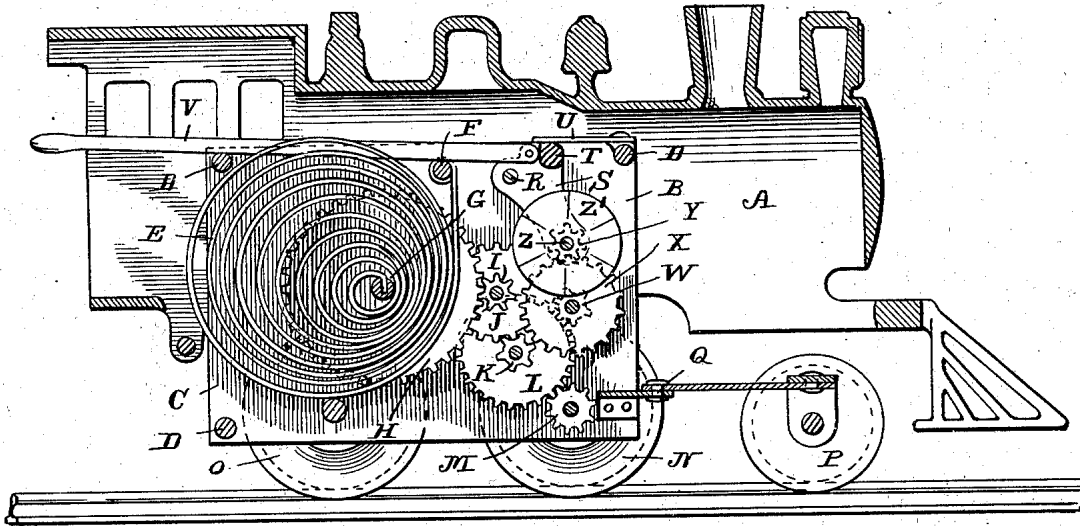
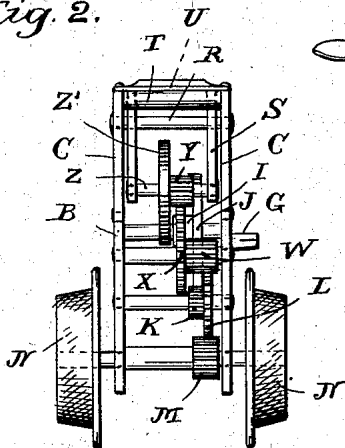
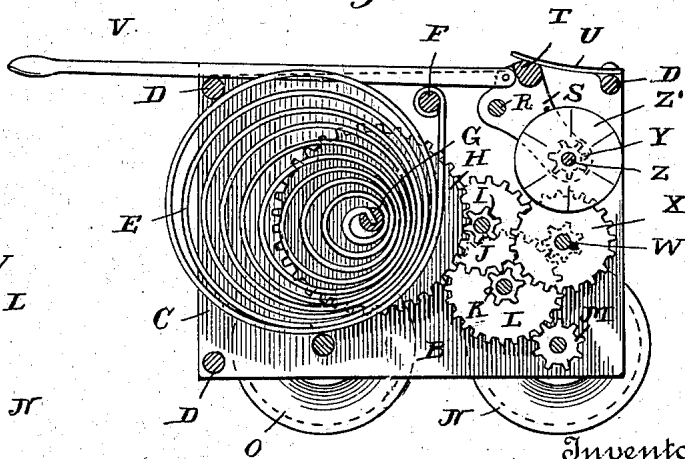


Fig. 2.



Witnesses  
William H. Devitt  
Samuel C. Sherr

Fig. 3.



Inventor  
Harry C. Ives  
By Chamberlain & Newman  
Attorneys

# UNITED STATES PATENT OFFICE.

HARRY C. IVES, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE IVES MANUFACTURING CORPORATION, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## TOY LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 729,765, dated June 2, 1903.

Application filed July 23, 1902. Serial No. 116,612. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY C. IVES, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Toy Locomotives, of which the following is a specification.

My invention relates to new and useful improvements in speed-regulating mechanism for spring-actuated movements such as are used in mechanical devices, and is designed more particularly for toy locomotives such as are employed to run either upon a track or upon a level and designed to draw one or more cars at will. Heretofore in devices of this class the strength of the spring employed has been selected according to the size of the toy and the number of cars to be drawn. Therefore in practice the movement when wound and started would carry the desired number of cars at a proper rate of speed without liability of accident from excessive momentum. If, however, several or all of the cars were left off and the locomotive operated with a corresponding decrease of resistance, it would frequently jump the track, thus causing annoyance and destruction.

It is therefore the object of my invention to provide an attachment for the movement which can be thrown in or out at will, so as to give a more uniform travel to the train, whether it consists of a locomotive and one car or a locomotive and six cars, at the same time reserving the full energy of the spring and giving a corresponding amount of travel.

With the above objects in view my invention resides and consists in the novel construction and arrangement of parts shown upon the accompanying sheet of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a central vertical longitudinal section through a toy track-locomotive provided with a spring-actuated movement fitted with my speed-regulating device, the same being shown in operative engagement with the movement. Fig. 2 is a front end elevation of the movement and its drivers shown

in the preceding view. Fig. 3 is a sectional view of the movement shown in Fig. 1, the speed-regulating device, however, being out of engagement.

Referring in detail to the characters of reference marked upon the drawings, A indicates the locomotive proper, which may be formed of cast-iron in the usual or any preferred manner; and B the movement, which is fitted and secured therein. The several parts of the movement proper are mounted in a frame consisting of vertical sheet-metal side pieces C C, secured together by means of transverse posts D.

E represents the usual form of movement-spring, the outer end of which is fastened to a pin F, the inner end being secured to a rotatable shaft G, which is journaled in the frame C C and carries a gear H. This gear in turn meshes with and drives a pinion I on the second shaft, likewise journaled in the frame and carrying a larger gear J, which latter again meshes with a small pinion K on the third shaft and carries a gear L. From this gear L the power is transmitted to a pinion M on the driving-shaft, which is also journaled in the parts C C of the frame and has secured to its outer ends driving-wheels N.

O indicates the rear wheels of the locomotive, which are suitably secured to an axle journaled in the sides C C of the frame, and P represents the forward truck, which is pivoted at Q to a bracket secured to the movement-frame.

A pivotal pin R is secured in the upper part C C of the frame, and upon this pin is hinged a swinging bracket S, which comprises a pair of bell-crank arms secured together by an intervening cross-piece T. This cross-piece is provided with two flat surfaces, which are engaged by a suitable spring U to retain the bracket in either of the positions shown in Figs. 1 and 3.

V indicates a longitudinally-disposed operating-rod which is connected to the swinging bracket in question in a manner to move the same in or out to either of the positions indicated for a purpose which will next be described.

W represents a pinion which is engaged

and driven by the gear L. This pinion is mounted upon a shaft journaled in the sides of the frame and carries a larger gear X to engage and drive the pinion Y upon the shaft Z, journaled in the depending arms of the swinging bracket. A split flexible disk Z' is also secured upon this shaft and constitutes the speed-governing device proper, which disk by reason of its flexible nature and the serrations therein expands and spreads according to the rapidity of its rotation and in this way retards the speed of the movement.

By reason of the construction shown and described it will be seen that the bracket of the regulating device is pivoted upon the pin R in such a manner that the pinion Y can be engaged and disengaged from the gear X, moving it from the position shown in Fig. 1 to that shown in Fig. 3, or vice versa. In either of these positions it is held by the spring U until operated by the handle V. Therefore in practice if the complete train is put in operation the regulating mechanism is thrown out of engagement, as shown in Fig. 3, whereas if a shorter train is employed it is thrown in, thus retarding the speed and insuring the safe travel of the train.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a spring-actuated movement, of a speed-regulating device com-

prising a hinged bracket, a pinion mounted in the bracket, and a flexible disk connected with the pinion adapted to be thrown into and out of engagement with the movement, substantially as shown and described. 35

2. The combination with a spring-actuated movement, of a hinged frame, a gear and disk carried thereby and a spring to retain the gear in and out of engagement with the movement, as desired. 40

3. The combination with a spring-actuated movement, of a speed-governing device comprising a pinion, a shaft and a laterally-slotted flexible disk operatively connected, a swinging frame in which the shaft is mounted, a handle for operating the swinging frame to throw the pinion into or out of engagement with the movement, whereby the speed of the latter may be governed as desired. 50

4. A speed-governing device comprising a swinging frame, a gear and disk mounted therein, a handle for moving the gear into or out of engagement with the mechanism to be controlled, a spring for retaining the governing device in either of said adjusted positions. 55

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 3d day of May, A. D. 1902.

HARRY C. IVES.

Witnesses:

C. M. NEWMAN,  
M. S. PLATT.