

(No Model.)

F. N. LANG.  
AUTOMATIC RACE COURSE.

No. 410,981.

Patented Sept. 10, 1889.

Fig. 1.

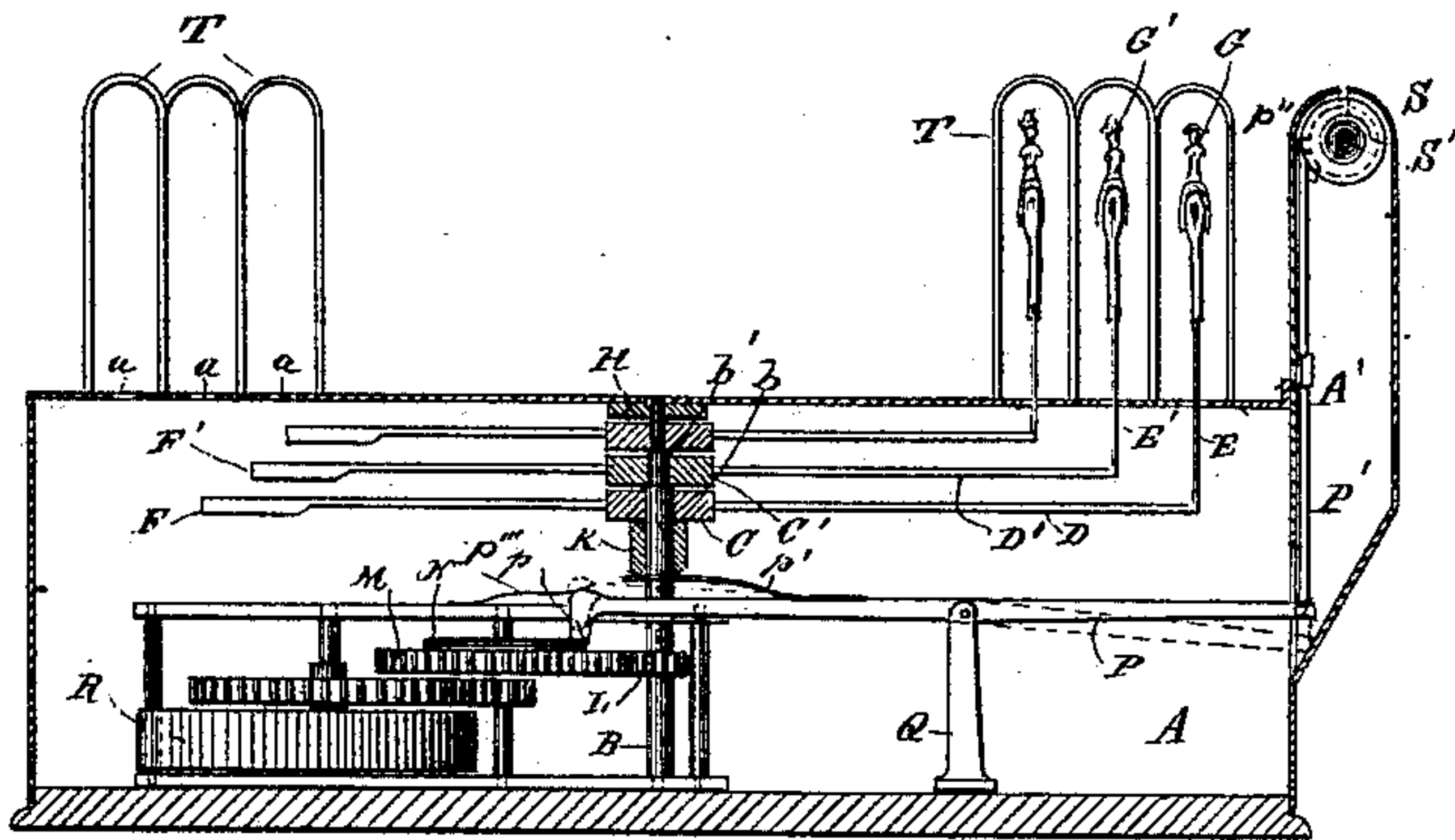
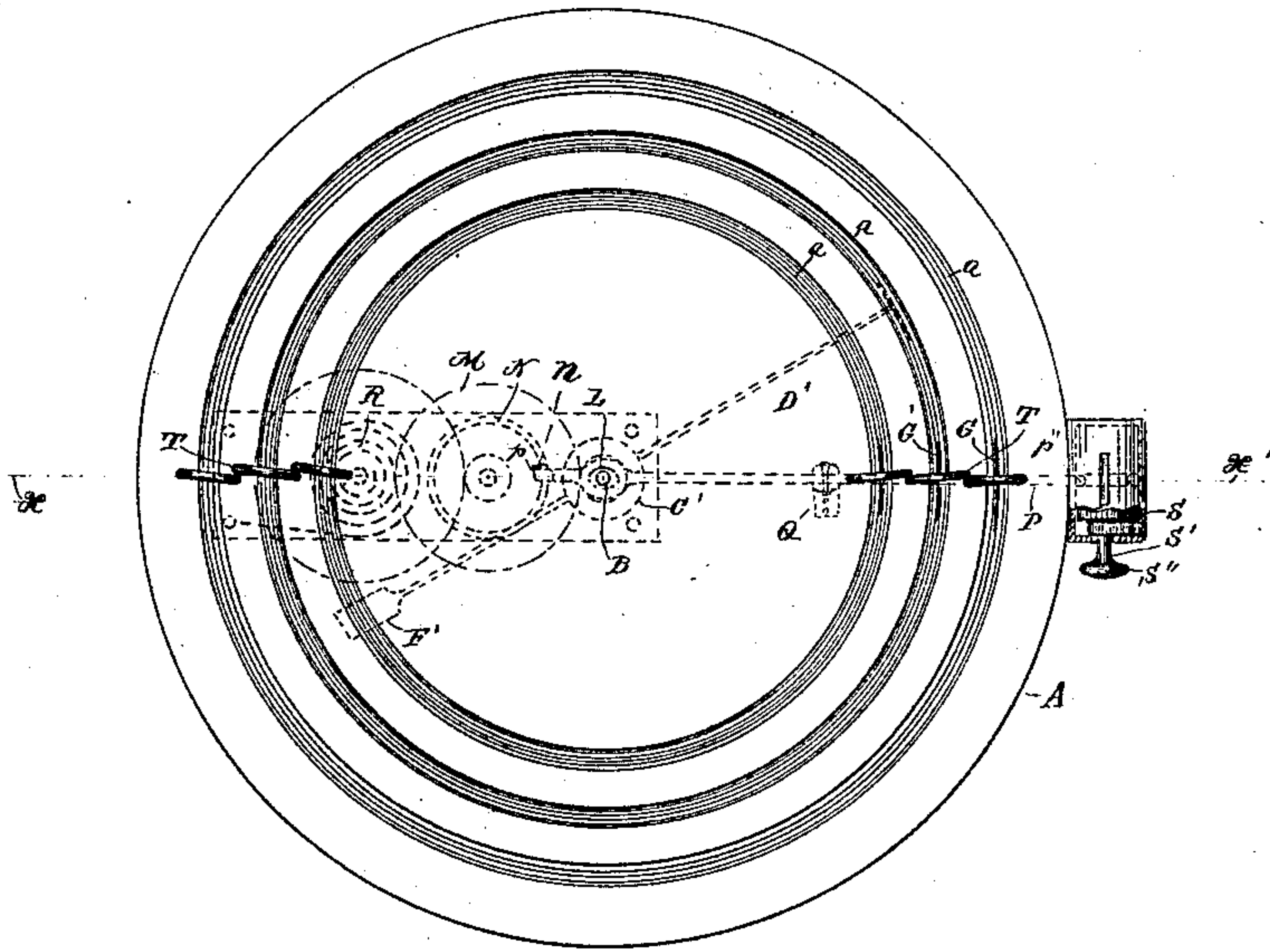


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC RACE-COURSE.

SPECIFICATION forming part of Letters Patent No. 410,981, dated September 10, 1889.

Application filed February 21, 1889. Serial No. 300,780. (No model.)

*To all whom it may concern:*

Be it known that I, FRED N. LANG, a citizen of the United States, and a resident of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented a certain new and useful Automatic Race-Course, of which the following is a specification, reference being had to the accompanying drawings.

My invention has for its object to provide a device for use as a toy or for vending purposes. It was especially designed for use in connection with a coin-controlling device, but may be constructed so as to be used without a coin device.

In carrying out my invention I employ a graduated shaft under tension, and upon the shaft I mount a series of collars provided with arms carrying figures of any desired kind. Each collar normally rests on a shoulder of the shaft and is free to turn thereon. The top of the shaft is provided with a disk or other suitable resistance, and on the shaft, below the revolving collars, is a sliding collar. By a suitable clamping device these collars and their connected figures may be locked together and to the shaft, or set free from each other at will. By an escapement the tension is rendered temporarily available to turn the shaft, and is tripped at a given time to stop the same. The clamp is preferably so constructed that the device or lever for operating the same serves as an escapement to the power mechanism for driving the shaft, so that the act of clamping the collars together will release the escapement and allow the tension to take effect upon the shaft for a limited time, when it will stop the same and unclamp the collars, allowing them to turn independently on their supporting-shaft.

In the accompanying drawings, Figure 1 is a transverse vertical section of my invention, on the line X X' of Fig. 2. Fig. 2 is a plan of the same.

A is a suitable case or supporting-frame, the top plate of which is provided with one or more annular slots or tracks  $\alpha$ .

B is the supporting-shaft, mounted in bearings in the case A, and having a series of graduated sections  $b b'$ , &c., near its upper ends.

C C', &c., are a series of collars loosely mounted on the graduated sections  $b b'$  of the shaft B, each of which is provided with laterally-extended horizontal arms D D', &c. The horizontal arms are provided with a corresponding series of vertical extensions E E', &c., passing upward through the annular slots or tracks  $\alpha$ . At their opposite extremities the horizontal arms are also provided with a series of counter-weights F F', &c. On the vertical extensions E E' are placed horses G G', &c., or any other desired figures.

To the top of the shaft B, or some part of the same above the series of revolving collars, is secured, as shown, a rigid disk H, and on the shaft B, below the revolving collars, is secured a slidable collar K. On the shaft B, below the sliding collar K, is a pinion L.

M is an ordinary spring-gear in engagement with the pinion L.

The top of the escapement-wheel of this mechanism is provided with a raised track N, having one or more notches  $n$  or portions cut away in its periphery.

P is a clamping-lever, pivoted to any suitable support within the case—as the post Q—and provided at one end with a lug or hook-like extremity  $p$ , adapted in one position to ride on the raised track N, and in another to engage with the notches therein. The inner end of the lever P is so located with reference to the sliding collar K as to engage therewith, or is provided with a spring-arm  $p'$ , normally in contact with said collar.

To the frame-work of the clock mechanism is attached a retracting-spring  $p''$ , normally holding the inner end of the clamping-lever P in engagement with the track N.

To the outer end of the lever P is attached a vertical arm P', provided at its upper extremity with a right-angled head or lug  $p''$ .

The case A is provided with a vertical extension A', and in the top of the same is mounted a slotted cylinder S under spring tension, the spring tending to hold the slot in the cylinder in line with a corresponding slot in the top of the extension A'. The right-angled lug  $p''$  on the lever P' projects against the periphery of the cylinder S. The slot in the cylinder and in the top of the extension



A' are of a size to admit a coin. The slot in the cylinder is of less depth than the diameter of the coin intended to be used.

To the top of the case are secured a series of upright bridges or arches T, overhanging the tracks *a*, under which the figures pass in their revolution, for the purpose of supporting the central section of the top plate of the case.

The cylinder S is provided with a stem S', projecting through the wall of its case, having a thumb button or crank S'' on its extremity for turning the same.

If the coin be placed in the slot of the cylinder and the cylinder be turned to the left, the outer edge of the coin will come in contact with the lug *p''*, operating as a cam to depress the outer end of the clamping-lever P, raising its inner end to the sliding collar K against the revolving collars C C', clamping them all together by frictional contact. At the same time the lug *p* is raised to the top of the track N, and the clock mechanism revolves the shaft several revolutions, until the lug *p* falls into the notch on the track, when the shaft will be suddenly stopped and the collars be set free on their respective bearings, and will revolve independently thereon by their own momentum. The coin will be dropped out of its slot into the interior of the case after passing the lug *p''*. Before dropping in the coin the figures may be set together or at any desired distance apart, and an open question will be left as to which figure will stop first or last under the action of the gathered momentum.

The revoluble shaft might be put under tension in any other suitable way by the direct or indirect application of a spring or weight; or, instead of a mechanical motor, any other motive force might be used, and the escapement be applied to start or stop the motor, or to connect and disconnect the shaft.

What I claim, and desire to secure by Letters Patent, is as follows:

1. In a toy race-track, the combination, with a rotary shaft, of arms or rods journaled thereon and carrying miniature figures, and means for securing the arms to said shaft during its period of rotation and for releasing them therefrom when the motion of the shaft is arrested, so that they can revolve thereon by acquired momentum, substantially as and for the purpose set forth.

2. The combination, with a revoluble shaft and actuating mechanism therefor, of one or more collars loosely mounted on said shaft,

each having a figure connected therewith, and escapement and clamping devices for temporarily releasing the actuating mechanism and locking said collars to the shaft, substantially as described.

3. The combination, with a revoluble shaft under tension, of one or more collars loosely mounted on said shaft, each having a figure connected therewith, and escapement and clamping devices for temporarily releasing said shaft and locking said collars to the shaft, substantially as described.

4. The combination, with a revoluble shaft under tension, of one or more collars loosely mounted on said shaft, each having a figure connected therewith, escapement and clamping devices for temporarily releasing said shaft and locking said collars to the shaft, and a coin-controlled device for operating said escapement and clamping devices, substantially as described.

5. The combination, with a graduated or shouldered shaft under tension, of a series of collars loosely mounted on said shaft, each having a figure connected therewith, and escapement and clamping devices for temporarily releasing said shaft and clamping said collars to the shaft, substantially as described.

6. The combination, with a shaft under tension, of a series of collars loosely mounted on said shaft, each having a figure connected therewith, an escapement-wheel for said shaft, and a lever for controlling said escapement and for clamping said collars to said shaft, substantially as described.

7. The combination, with a graduated or shouldered shaft under tension, of a series of collars loosely mounted thereon, each having a figure connected therewith, an escapement-wheel for said shaft, a lever for controlling said escapement and for clamping said collars together and to the shaft, and a coin-controlled device for operating said lever, substantially as described.

8. The combination, with a graduated or shouldered shaft under tension, of collars loosely mounted thereon, having figures connected therewith, the escapement-wheel for said shaft, the combined escapement and clamping lever, and the controlling and tripping cylinder having a coin-slot adapted to hold a coin in position to operate said lever as the cylinder is revolved to drop the coin, substantially as described.

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