(No Model.)

4 Sheets—Sheet 1.

F. STREET.

COIN CONTROLLED ELECTRIC TOY.

No. 596,290. Patented Dec. 28, 1897.

FIG. 5.

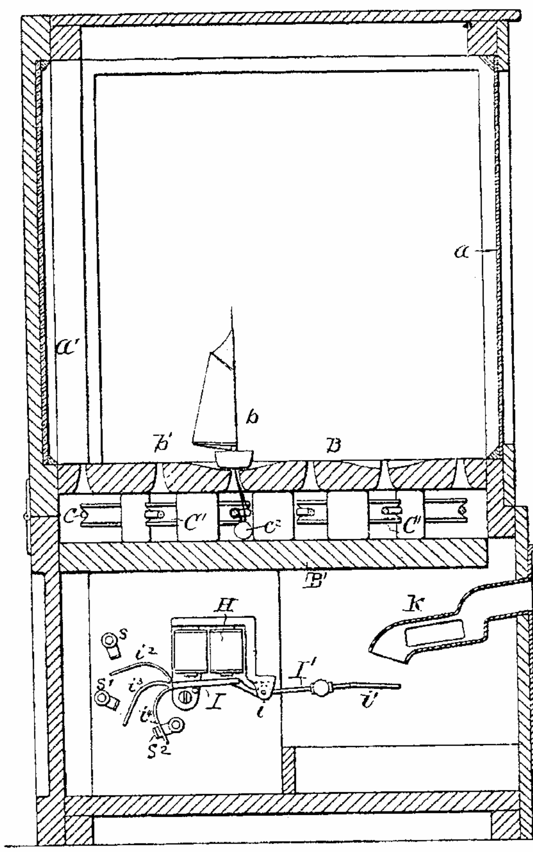


FIG. 6.

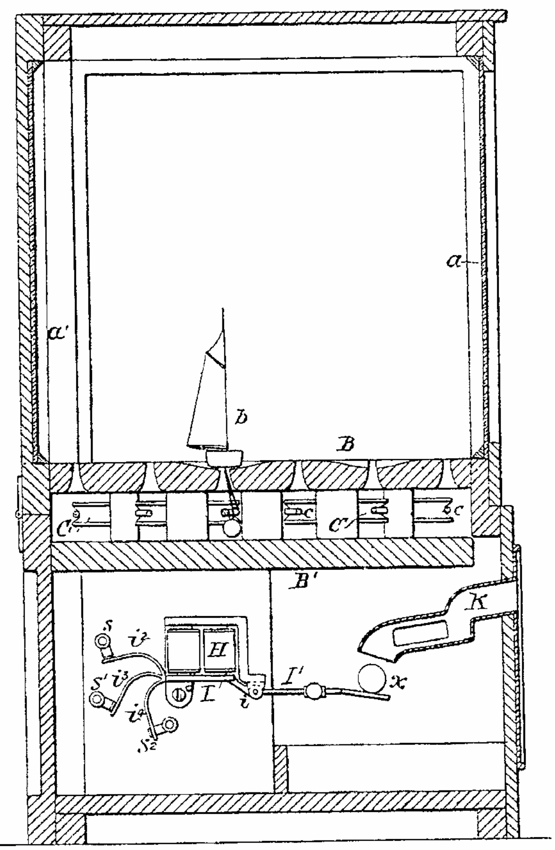
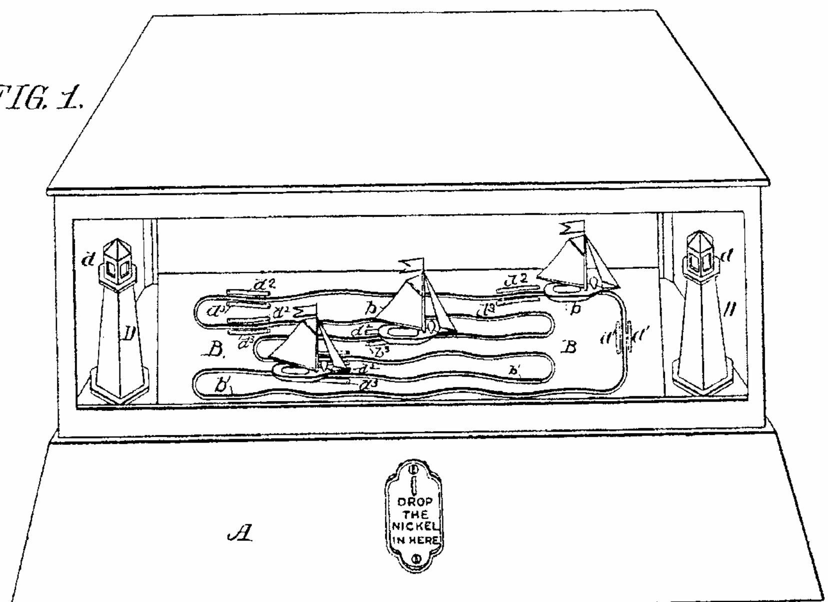


FIG. 1.



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(No Model.) 4 Sheets—Sheet 2.

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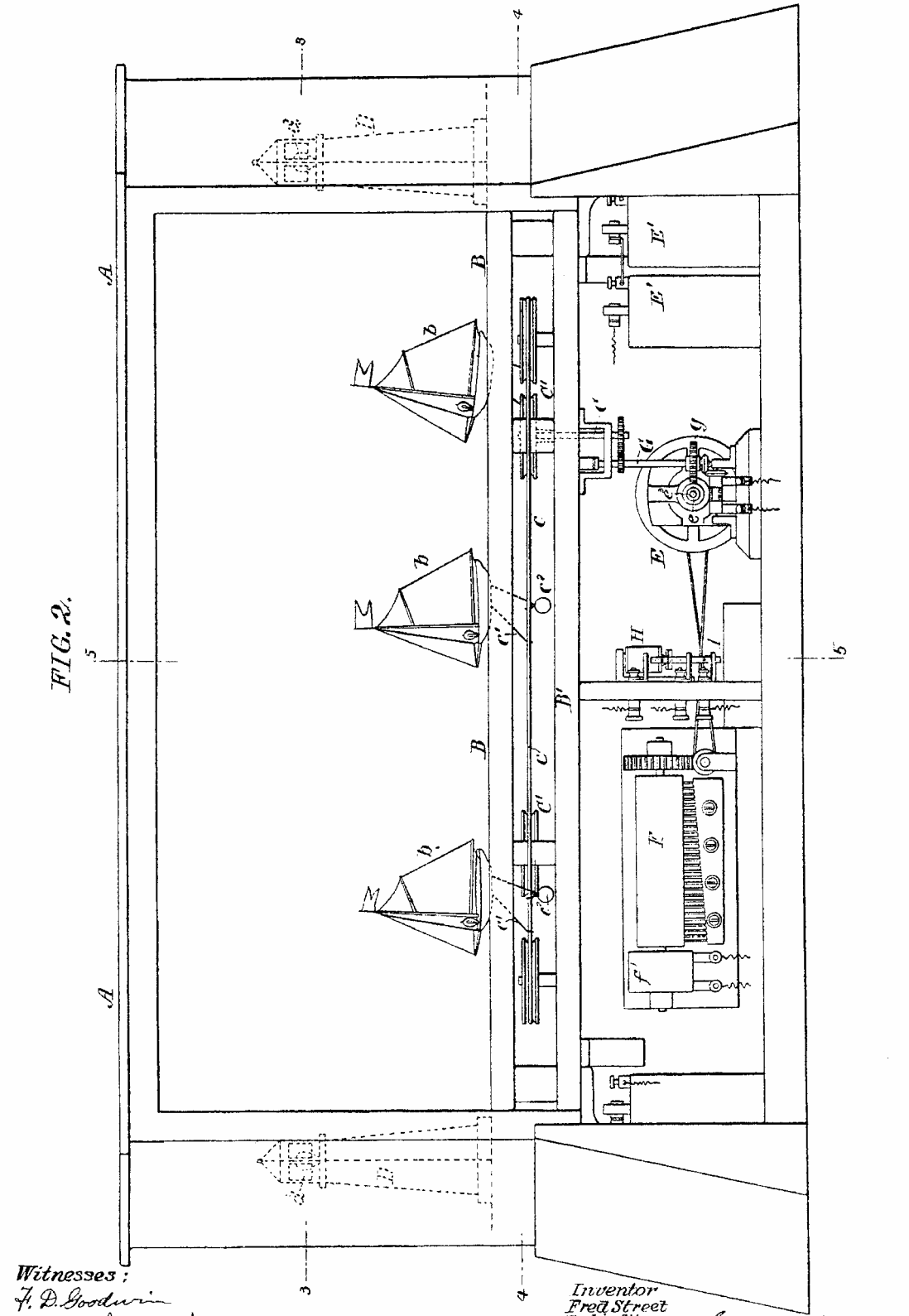

FIG. 2.

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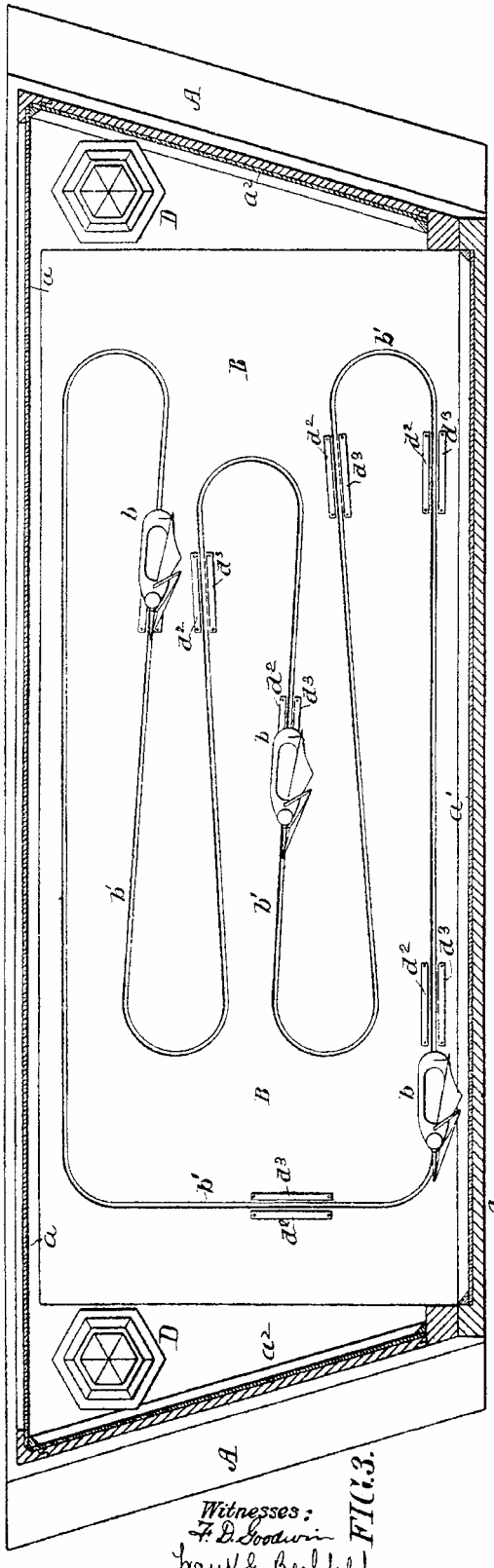

FIG. 3.

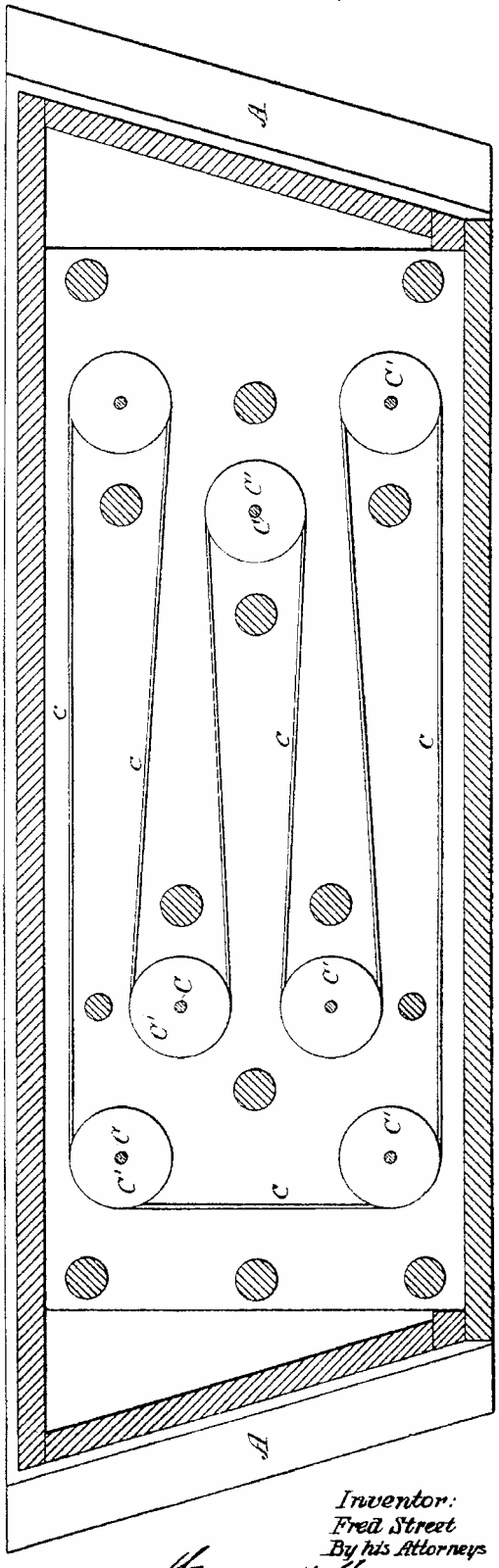

FIG. 4.

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COIN CONTROLLED ELECTRIC TOY.

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FIG. 8.

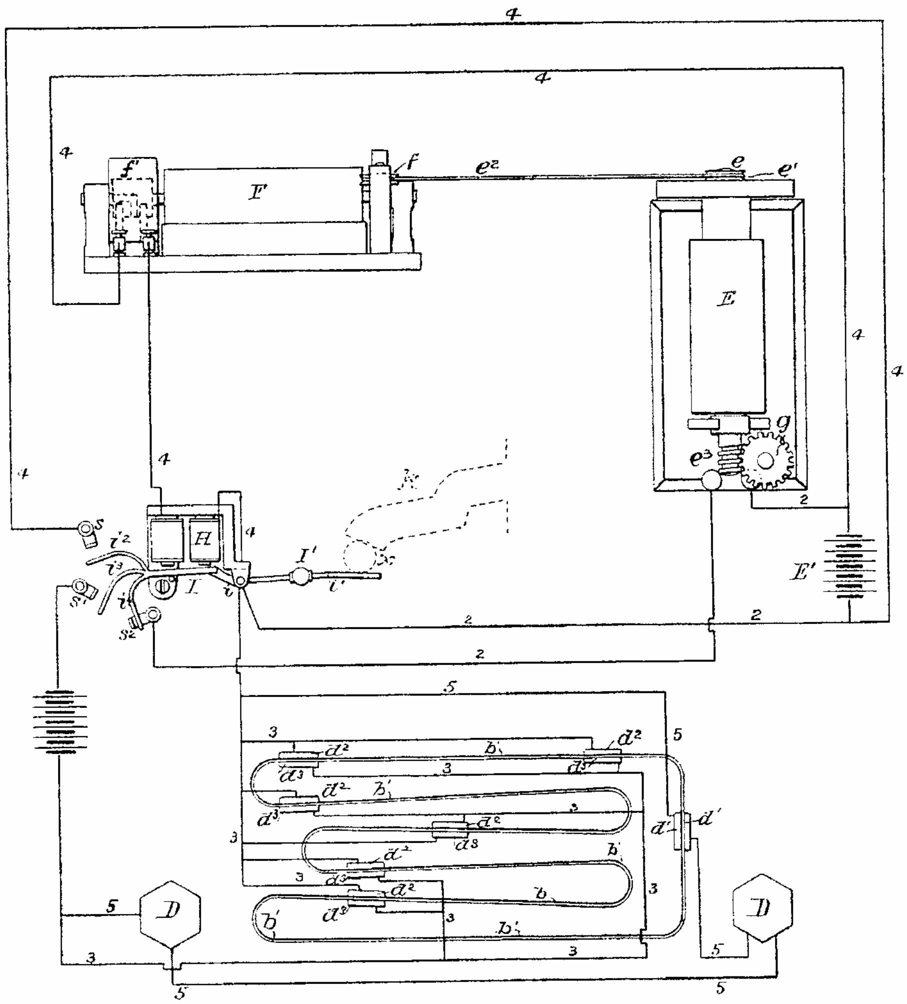
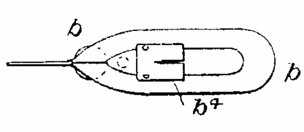


FIG. 7.



Witnesses:
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UNITED STATES PATENT OFFICE.

FRED STREET, OF PHILADELPHIA, PENNSYLVANIA.

COIN-CONTROLLED ELECTRIC TOY.

SPECIFICATION forming part of Letters Patent No. 596,290, dated December 28, 1897.

Application filed August 11, 1894. Serial No. 520,030. (No model.)

To all whom it may concern:

Be it known that I, FRED STREET, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Coin-Controlled Electric Toys, of which the following is a specification.

The object of my invention is to construct a coin-controlled electrical toy in which is combined propelling mechanism for a series of boats or other models, electric-lighting mechanism, and a musical instrument, so that when a coin is placed in the machine it will throw in circuit the several mechanisms and the models will traverse over the course while the musical instrument is in action, and at intervals the lights on the models will be also thrown into circuit.

In the accompanying drawings, Figure 1 is a perspective view of my improved coin-controlled electrical toy. Fig. 2 is a rear view with the back removed, so as to show the operating mechanism. Fig. 3 is a sectional plan view on the line 3 3, Fig. 2. Fig. 4 is a sectional plan view on the line 4 4, Fig. 2. Fig. 5 is a transverse section on the line 5 5, Fig. 2, showing the switch open. Fig. 6 is a similar view showing the switch closed immediately after the coin has dropped on the lever. Fig. 7 is an inverted plan view of one of the boats, showing the contact; and Fig. 8 is a diagram of the circuit.

A is an oblong casing provided with a glass front *a*, so as to expose the boats *b* as they traverse the slots *b'* in the bed B.

In the back *a'* and in each of the sides a^2 (which are preferably beveled) are mirrors to reflect the boats, and in each side of the bed are two lighthouses D D, having incandescent lights *d*. The current to these lights is turned on at intervals.

Below the bed B is a partition B'. Vertical shafts C are adapted to bearings in the partition and bed, the shafts carrying wheels C'. A cord *c* passes around the several wheels, and the several boats *b* are connected by a cord *c'* to the cord *c*, and on one loop of each cord *c'* is suspended a weight c^2, which allows the boats to rise and fall on the undulating surface of the bed B, thus imitating the roll of a boat at sea.

The slot *b'* is shaped as clearly shown in Fig. 3, and the boats are secured to the cord in such manner that the three boats, for instance, will move in the same direction during the major portion of the time occupied, as it will be understood that the instrument only runs for a given length of time on the insertion of a coin. It will also be noticed that the inner slots on the bed are shorter than the outer slots, so that at each turn the boats will be in different positions. At one time the boats will be far apart, and at another time two and, in some instances, three boats will be abreast, giving the effect of actual racing, adding materially to the interest in the toy.

Referring particularly to Fig. 2, E is the electric motor, of the ordinary type, which is driven in the present instance from a circuit from the battery-cells E', as shown clearly in the diagram, Fig. 8. The shaft *e* of the motor has a pulley *e'*, around which passes a belt e^2 to a wheel *f*, which drives the musical instrument. This musical instrument in the present instance is constructed similar to a music-box having a drum with pins thereon, which come in contact with the projecting fingers of a comb; but any musical instrument that can be driven may be used. The musical instrument has an ordinary circuit-breaker *f'*, which breaks the circuit after one or more rotations of the drum, this circuit-breaker throwing all the mechanism out of circuit until another coin has been inserted.

On the shaft *e* of the motor E is a worm e^3, meshing with a worm-wheel *g* on a vertical shaft G, which is geared to one of the shafts C, carrying the wheels C', around which the cord *c* passes. Thus the electric motor not only drives the musical instrument, but also moves the cord to which the boats are attached.

H is an electric magnet, and I is an armature pivoted at *i* and having an arm I', extending beyond the pivot *i* and provided with a plate *i'* for the reception of the coin *x*, which is passed through the coin-chute *k* at the front of the machine. On the armature are three spring-fingers i^2, i^3, and i^4, which come in contact with terminals *s*, *s'*, and s^2, respectively, when the coin drops onto the arm I' of the armature, thus throwing the magnet H in circuit, which holds the armature up in position, keeping the other two circuits

closed. The circuit 2 is the motor-circuit, which is controlled by the finger i^4 and terminals s^2.

3 is the lighting-circuit, controlled by the finger i^3 and the terminal s'.

As soon as the coin touches the armature-lever it falls into a suitable receptacle, so that its weight does not hold the armature in position. The magnet II holds the armature until cut off by the circuit-breaker f' of the musical instrument in the present instance.

When the musical instrument plays for a given length of time, the circuit-breaker f', which is in the magnet-circuit 4, breaks the said circuit, causing the armature I to drop away from the magnet II. Consequently the other circuits are broken and all mechanism is stopped. The blank space in the circuit-breaker f' is narrow, and the momentum of the parts will carry the circuit-breaker in contact with the terminals again, so that the magnet-circuit will be complete when a coin is dropped onto the arm I'. The light-circuit 3 passes through the terminals d^2 and d^3 on each side of the slot b in the bed B, and on the under side of each boat are brushes b^4, which when the boat passes over the terminals d^2 d^3 close the circuit and thus light the incandescent lights on the boats.

The lights d d in the lighthouses D D are preferably on a separate circuit 5, passing which are the contact-plates d' d', so that when any one of the boats passes over the plates the lights will be in circuit. In some instances the lighthouse-lights may be in the circuit 3 with the boat-light, and the circuit may be differently arranged without departing from the main feature of my invention.

When a coin—say, for instance, a nickel—is placed in the coin slot or chute k, the armature is moved so as to make all the several circuits, the boats are set in motion, the musical instrument is also set in motion, and when any one of the boats passes over the contacts the lights on the boats will shine and at intervals the lights on the lighthouses will be in circuit, giving a very pleasing effect.

I claim as my invention—

1. The combination of the bed, a series of slots therein connected at the ends by loops forming a continuous slot, model boats adapted to traverse over the course marked by the slots, a cord looped to correspond to the slots, pulleys around which the cord passes, one of said pulleys being a driving-pulley, an electric motor geared to said driving-pulley, lights on one or more of the boats, brushes on the bottom of the boats, contacts on each side of the slot connected to a source of electric supply, so that when the boat travels over the contacts, the circuit will be made and the electric lamp lighted, substantially as described.

2. The combination of the bed having a series of connected slots, a driving-cord under the bed following the contour of the slots, a series of boats or other models attached to the cord and adapted to travel over the slots of the bed, contact-plates at each side of the slot at intervals, one or more lighthouses, electric lights therein, a circuit-maker on one or more of the boats so that as the boat having the circuit-maker passes over the contact-plates it will close the circuit and light the lamps in the lighthouses, substantially as described.

3. The combination of the bed having a series of connected slots, a driven endless cord following the contour of the slots, boats or other models attached to the cord and adapted to travel over the slots, an electric lamp carried by each boat, a circuit-maker on the bottom of each boat, contact-plates arranged at intervals along the bed, a battery communicating with the contacts so that when the boats travel over the contacts a circuit will be made and the lamps lighted, substantially as described.

4. The combination in a coin-controlled electric toy, of the bed having a series of connected slots, boats adapted to travel over the slots, a propelling-cord following the contour of the slots and connected to the boats, an electric motor for driving said cord, a musical instrument driven from the motor, a cut-out connected to said musical instrument, a magnet, an armature having an arm, the coin-chute adapted to discharge the coin upon said arm, a series of fingers on the armature, a series of fixed contacts with which the fingers engage when the coin is dropped upon the arm closing the magnet-circuits causing the magnets to hold the armature in an elevated position and closing the motor-circuit whereby the cord to which the boats are attached will be set in motion as well as the musical instrument, the circuit-breaker of the musical instrument breaking the magnet-circuit allowing the magnet to fall which will cut out the motor and stop the apparatus, substantially as described.

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

FRED STREET.

Witnesses:
MURRAY C. BOYER,
H. F. REARDON.