Aug. 13, 1929. R. V KUEN 1,724,094

BIPEDAL TOY

Filed Feb. 10, 1927

Fig. 1.



Fig. 2.

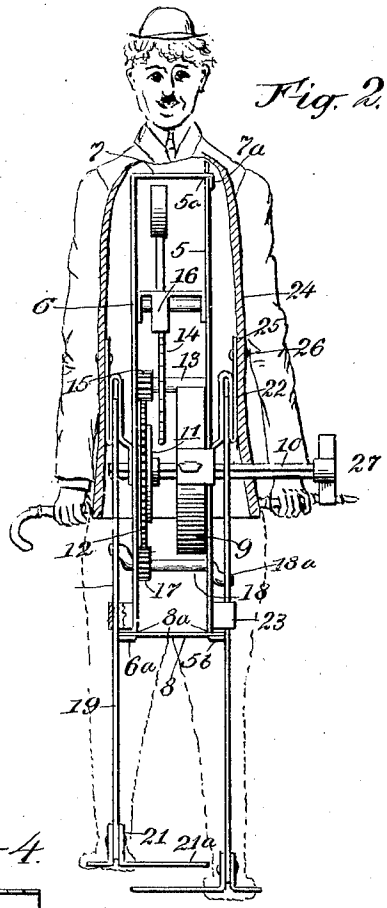


Fig. 3

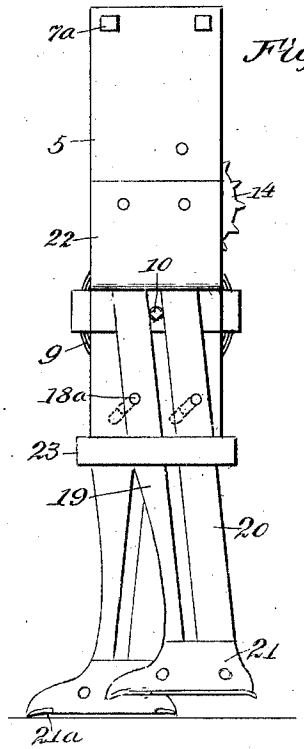


Fig. 4.

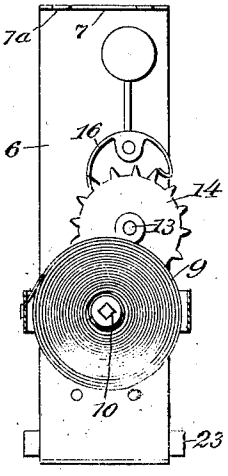
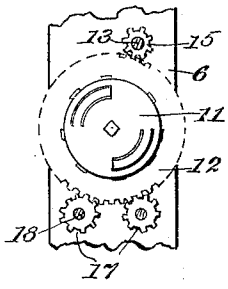


Fig. 5.



Inventor

Rhinehart V. Kuen

By J. M. St. John

Attorney

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UNITED STATES PATENT OFFICE.

RHINEHART V. KUEN, OF NORWAY, IOWA.

BIPEDAL TOY.

Application filed February 10, 1927. Serial No. 167,161.

This invention relates to mechanical toys, and has for its object to produce a bipedal figure which is made to walk and run by mechanical means.

The invention is fully disclosed in the description and claims following, reference being had to the accompanying drawing, in which:

Fig. 1 is a side view of a grotesque figure containing an embodiment of the invention. Fig. 2 is a front view of the same, the enclosing figure being partly in section to disclose the mechanism within. Fig. 3 is a side elevation of the mechanism detached. Fig. 4 is a similar view showing the internal mechanism in the upper part of Fig. 3, the nearer legs and side-plate of the casing being removed. Fig. 5 is a detail, showing the operating gearing and the engaging ratchet therefor.

A rectangular sheet metal casing is herein shown as composed of three principal parts, a flat plate 5, slotted at 5^a to receive the tangs of a connecting plate, and with tangs 5^b to similarly connect with an end-plate; a parallel side-plate 6 bent to form an end-plate 7, having tangs 7^a to engage the slots in the other side-plate, and tanged at 6^a; and a bottom-plate 8 slotted at 8^a for the tangs of the two side-plates. The casing contains a simple spring motor of a familiar clock-work type, comprising essentially a mainspring 9, a winding shaft 10 therefor, a ratchet 11 attached to the shaft, a driving spur-gear 12 with which the ratchet engages, a shaft 13 carrying a click-wheel 14 and a pinion 15 engaging the spur gear, and an escapement pawl 16 to engage the click-wheel, and provided with a pendulum, herein shown inverted by reason of more space above than below. The spur gear engages two other pinions 17 on crank-shafts 18 journaled in the sides of the casing, and having oppositely formed cranks 18^a at their ends, which move in synchronism. The cranks engage leg members 19 and 20 at each side of the casing, and these are connected pivotally with feet 21. The leg members straddle the winding shaft, which thus serves as a guide for them in their up and down movement, and the turning of the cranks imparts to the feet a long elliptical motion, simulating the step of a human foot. A guide of folded sheet metal, 22 holds the upper ends of the legs from displacement, and a loop or stirrup 23 below the cranks holds them in working position with relation to the lower end of the casing.

It will be evident from this description of the construction, and by reference to Fig. 3, that the feet as moved forward to make a step, are carried parallel with the floor.

To prevent the erect figure from tipping sidewise as one foot is raised, each foot is provided with lateral wings 21^a extending inwardly far enough to furnish a supporting base, as shown in Fig. 2. In walking, these wings pass over each other alternately.

A burlesque human figure is herein shown (to harmonize with the abnormal feet), the hollow body 24 being adapted for attachment to the casing, as by lugs 25 and rivets 26. The body is made open below to admit the casing. The legs of the figure may be merely trousers, as shown in Fig. 1 and indicated by dotted lines in Fig. 2.

The legs being held from vibration while the mainspring is wound up by means of the thumb-piece 27, the figure will, when placed erect on the floor, execute a comical race across the floor, ending in a walk and finally stopping when the clock-work runs down.

Having thus described my invention, I claim:

1. A perambulating bi-pedal toy, combining a casing carrying an operating motor, a pair of oppositely cranked shafts driven concurrently by the motor, legs disposed at each side of the casing, each leg being a pair of members, each of which engages a crank, feet connecting said members pivotally, and a guide to allow vertical and prevent horizontal movement of the upper ends of the legs.

2. A toy of the designated class, comprising, with a motor and its retaining casing, a pair of engaging crank-shafts with oppositely disposed cranks, each pair of cranks in synchronous relation, legs composed of pairs of members, each engaging a crank, feet pivotally connecting with said pairs of members, and means for simultaneously rotating the crank-shafts.

In testimony whereof I affix my signature.

RHINEHART V. KUEN.