

(No Model.)

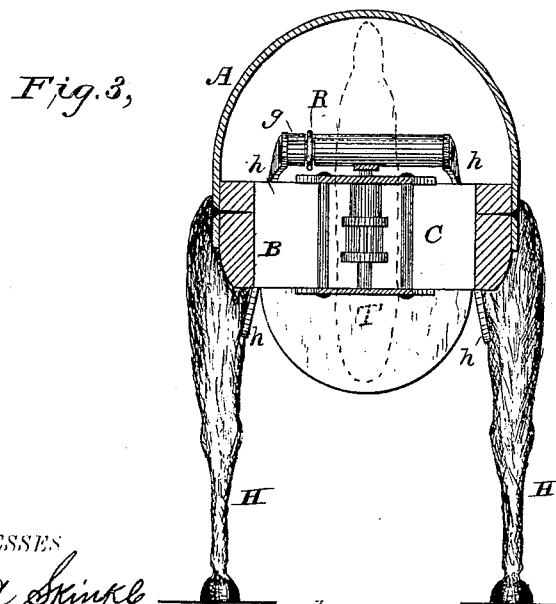
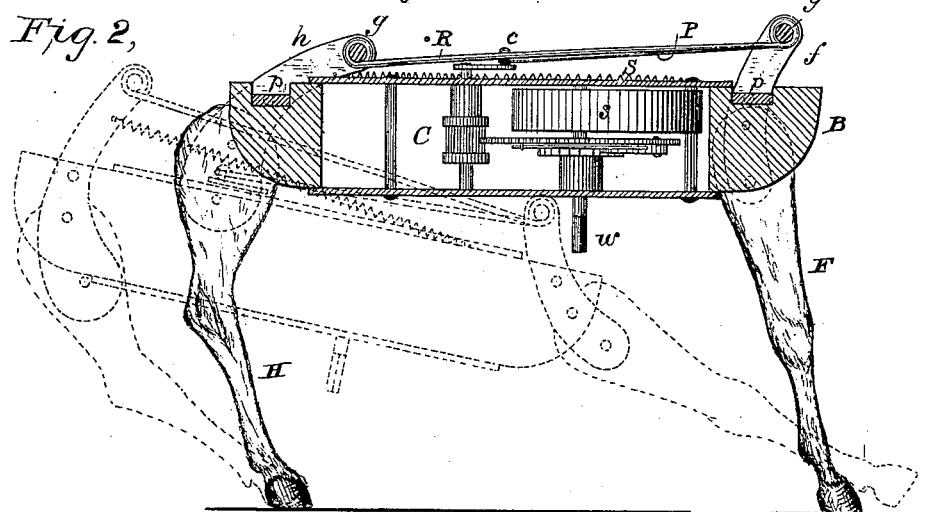
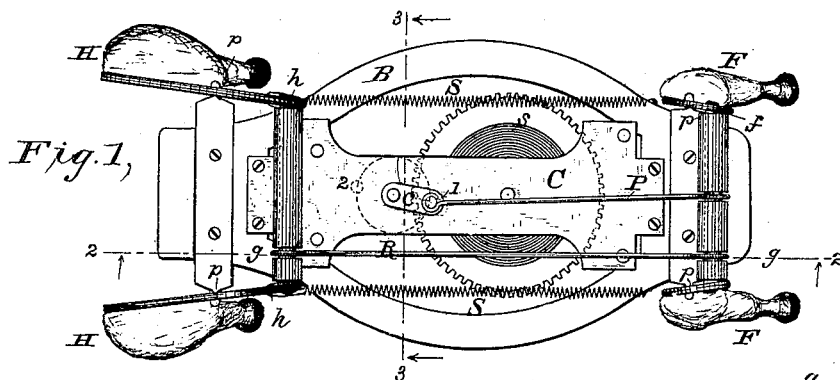
2 Sheets—Sheet 1.

J. J. SLOCUM.

AUTOMATIC TOY.

No. 263,437.

Patented Aug. 29, 1882.



WITNESSES

Wm A. Sinker
H. W. Plumer

By his Attorney.

INVENTOR

John J. Slocum.

As. L. Swin

(No Model.)

2 Sheets—Sheet 2.

J. J. SLOCUM.

AUTOMATIC TOY.

No. 263,437.

Patented Aug. 29, 1882.

Fig. 4.

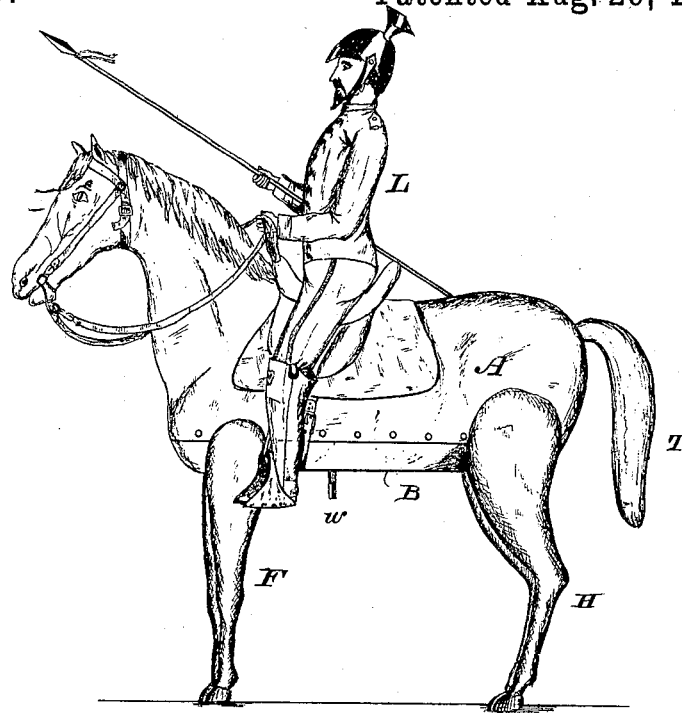


Fig. 5.

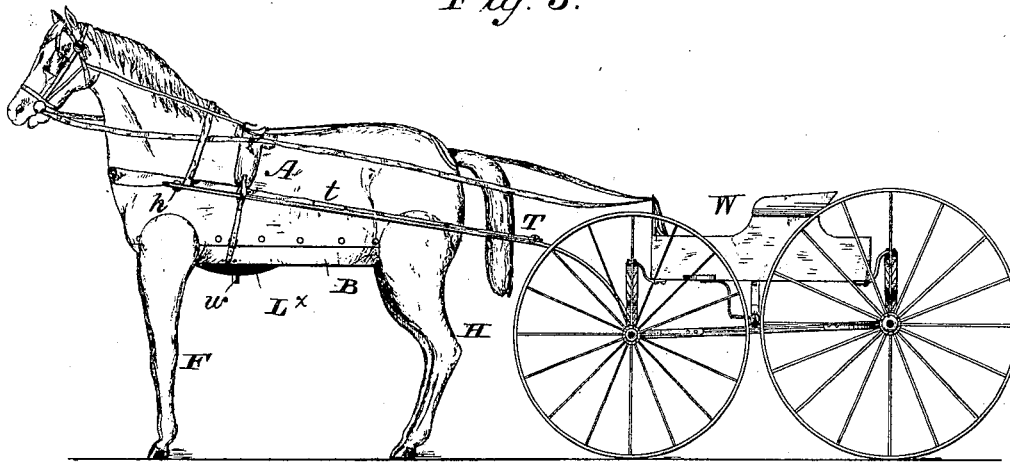


Fig. 6.

WITNESSES

Wm A. Sprinkle
H. W. Elmore

INVENTOR

John J. Slocum

By his Attorney

Wm. L. Ewing

UNITED STATES PATENT OFFICE.

JOHN J. SLOCUM, OF NEW YORK, ASSIGNOR OF ONE-HALF TO JOHN C. MOUNT, JR., OF BROOKLYN, N. Y.

AUTOMATIC TOY.

SPECIFICATION forming part of Letters Patent No. 263,437, dated August 29, 1882.

Application filed July 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. SLOCUM, a citizen of the United States, residing at New York, in the State of New York, have invented a new and useful Improvement in Automatic Toys, of which the following is a specification.

This invention relates to that class of toy automatons which simulate the appearance and movements of quadrupeds, including propulsion by limbs, without the aid of wheels.

My invention consists in certain novel combinations of parts, whereby the movements of a galloping horse are effectively imitated, and a highly-amusing and inexpensive toy is produced.

Heretofore the walking and trotting movements have been imitated; but these have involved complex and costly constructions, and, so far as I am aware, the galloping movement has not before been successfully attempted in automatic toys of the class aforesaid. This movement involves practical difficulties, owing to the necessity for moving all four legs simultaneously, and at the same time providing for the rise and fall of the body and for re-elevating the body without extraneous aid. I have succeeded in meeting these difficulties without complication of parts, and so that the new toy may be cheaply manufactured, with various modifications changing its appearance, as hereinafter more fully set forth.

In the drawings accompanying this specification, Figure 1 is a top view of the principal mechanical portion of my toy; and Fig. 2 is a vertical longitudinal section of the same, illustrating its operation. Fig. 3 represents a vertical transverse section through all. Fig. 4 is an elevation of the toy completed to represent a "Boston lancer." Fig. 5 is an elevation of the same modified to represent a horse and wagon, and Fig. 6 is a top view of the wire thills forming part of the latter.

Like letters of reference indicate corresponding parts in the several figures.

A and B represent respectively the two parts of which the "body" is composed, the upper part, A, being hollow and molded or shaped in dies in one or more pieces of suitable material, to represent the upper parts of a horse, for example, while the lower or inner part, B, is of wood, secured within said upper

body part, A, by tacks driven through the lower edges of the latter, as shown in Fig. 3, being so shaped as to represent the breast and belly of the animal, and more particularly to accommodate the working parts shown in Figs. 1, 3.

F F and H H represent respectively front and hind pairs of legs, preferably malleable-iron castings shaped to represent those of the animal simulated, and attached to the body part B by horizontal pivots *p*, which are formed in pairs by the ends of two metallic cross-bars secured on top of said body part B by screws driven into the wood, as shown in Fig. 1. The legs of the respective pairs are united above said pivots by rigid lever-frames *f h*, which are curved, as shown, so as to afford the requisite leverage and permit the legs to move back and forth the necessary distance without recessing for the protrusion or accommodation of said lever-frames. The front lever-frame, *f*, is made shorter from said pivots *p* upward than the hind lever-frame, *h*, so as to give the front legs the greater swinging motion for insuring life-like progression forward, while the hind legs act with greatest leverage.

R represents a rod of stiff wire connecting said lever-frames *f h*, said rod having loops *g g* at its ends to embrace cross-bars at the upper extremities of the respective lever-frames. The four legs are thus limited to like simultaneous motions, which produce the galloping effect.

S S represent a pair of spiral springs attached at their front ends to the said body part B, and at their rear ends to the sides of said hind lever-frame, *h*, and tending to retain the legs in normal or upright position. The strength of these springs is so proportioned relatively to the weight of the body or the load on the legs that they counterbalance the same, acting through said lever-frames and the legs as levers. They are stretched in depressing the body to bend the legs, so that auxiliary power thus stored may be utilized in the succeeding upward and forward motion.

C represents an actuating clock-work movement, such as are commonly used for various purposes; *w*, its winding-square; *s*, its driving-spring, and *e* a crank attached to an extension of the outer shaft of its train, said "movement"

C being secured within a recess in said body part B by screws. Said spring *s*, which is the heaviest part of the movement C, is located in the front part of the body, as shown, so as to afford a necessary excess of weight in front.

P represents a pitman, of stiff wire, connecting said crank *c* with the cross-bar of said front lever-frame, *f*.

T represents a rigid tail forming part of said upper body part, A, and serving as a stop to limit the descent of the rear end of the body of the toy.

When "unwound," or at rest, the toy stands substantially erect on its four legs, sustained by said springs S. It (or its driving-spring *s*) is wound by means of a key applied to the winding-square *w* in customary manner, and in "wound" condition it may be held in the hand or laid on its side without the works starting, owing to the same primary action of the springs S. When placed upon its feet on the floor or any level surface, so that the legs are caused to bear their load, the gravity of this, added to the power of the driving-spring *s*, lowers the body and stretches the springs S, as aforesaid, the parts at the end of this first movement occupying the positions indicated by dotted lines in Fig. 2, the driving-crank C having passed its center, as indicated at 2 in Fig. 1, 1 representing the starting-point of said crank. The front feet, in this movement, are caused to take an advanced position, as indicated in Fig. 2. The driving-spring *s* now tends to re-elevate the body, and, aided by the power stored in the springs S, as aforesaid, causes, through the described connections, the following movements in rapid succession: The front legs, owing to their relatively rapid motion, are caused to throw themselves clear of the floor and continue the descent of the rear end of the body, so that ordinarily the rigid tail T (if no substitute stop is provided) will strike the floor, as aforesaid. The power of all the springs is now concentrated in producing a rapid forward movement, accompanied by the elevation of the body, which continues to the end of the rotation of the driving-crank, when another lowering motion begins, without intermission, and thus the operation proceeds until the power stored in the driving-spring of the clock-work movement is exhausted. A rapid galloping motion is the visible effect, without liability of the toy to throw itself over sidewise or otherwise.

The weight of an ordinary clock-work movement, C, of the character indicated, located as above described, may be rendered sufficient in itself for weighting the toy; or a supplemental weight may be provided, as part of the toy, in the shape of a rider, L, as shown in Fig. 4; and when the toy horse is made with reference to use with a supplemental weight such a weight, L *x*, may be attached, in the shape of a leaden shield masking the movement C beneath, as shown in Fig. 5, or in any preferred form, when the same is to be used without a rider.

In Fig. 5 the toy horse is shown attached to

a toy wagon, W, by means of wire thills *t*. (Shown separately in Fig. 6.) A hole, *h*, in the neck of the upper body part, A, in the example accommodates the shouldered ends of the wire, which is attached to the wagon by its bowed end.

It will be observed that a single spiral spring or a spring or springs of a different form may be used instead of the pair of springs SS, and that the forms of fastenings employed, (screws and tacks,) as herein mentioned, and like details, may be varied at will.

Having thus described my said invention, I claim as new and desire to protect by Letters Patent—

1. In an automatic toy, the combination, with a suitable body, of four moving legs attached to the body by horizontal pivots, and united in front and hind pairs by rigid lever-frames above said pivots, a connection between said lever-frames, so as to compel the legs to move simultaneously, a spring or springs tending to retain the legs in normal position, an actuating clock-work movement, and connecting mechanism, substantially as herein specified, for imitating a galloping motion, in the manner set forth.

2. In an automatic toy, the combination, with a suitable body, of four moving legs attached to the body by horizontal pivots, and united in front and hind pairs by rigid lever-frames above said pivots, curved as herein specified, a connection between said lever-frames, a spring or springs tending to retain the legs in normal position, an actuating clock-work movement, and connecting mechanism, substantially as described, for the purpose set forth.

3. In an automatic toy, the combination, with a suitable body, of four moving legs attached to the body by horizontal pivots, and united in front and hind pairs by rigid lever-frames above said pivots, a connection between said lever-frames, a spring or springs tending to retain the legs in normal position, an actuating clock-work movement having its driving-spring located in the front part of the body, and mechanism connecting said driving-spring with the front lever-frame, substantially as herein specified.

4. In an automatic toy made in imitation of a galloping horse, the combination, with a suitable body, of front and hind legs connected with each other and with an actuating clock-work movement within the body, so as to move simultaneously, a rigid tail operating as a stop to limit the descent of the rear end of the body, and a spring or springs operating in connection with the legs to counterbalance the weight of the body and assist the actuating movement, substantially as herein specified.

JOHN J. SLOCUM.

Witnesses:

JAS. L. EWING,
HENRY A. LAMB.