July 8, 1947. S. BELZ 2,423,474

MECHANICAL HORSE

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Fig. 1.

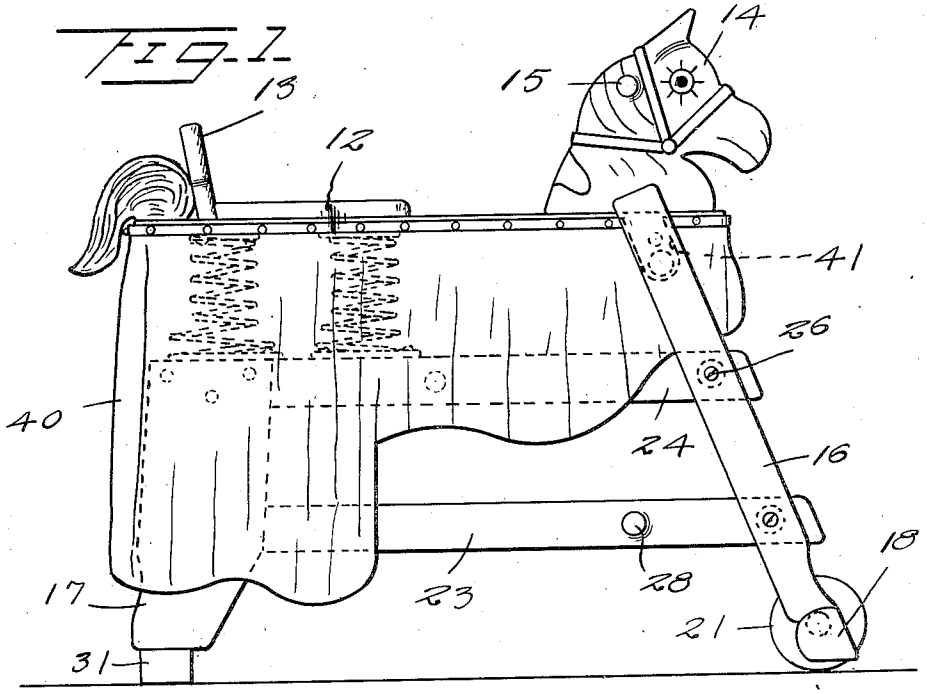


Fig. 2.

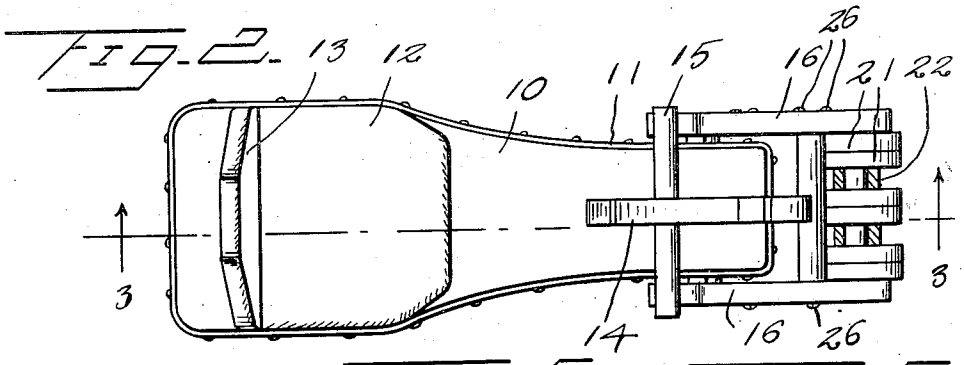


Fig. 5.

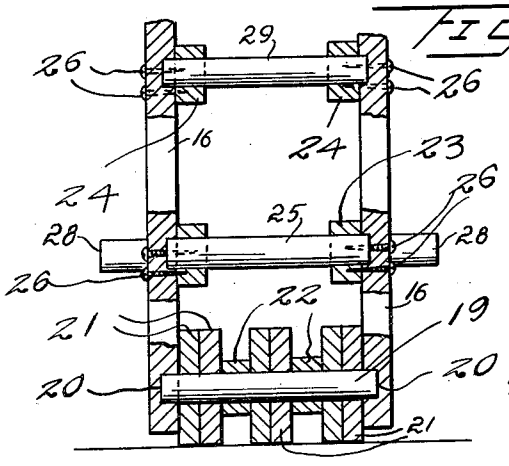
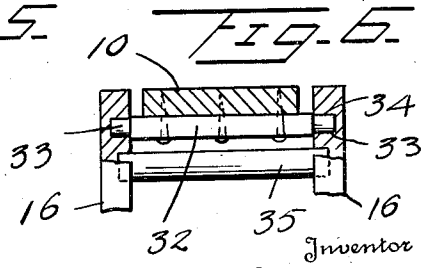


Fig. 6.



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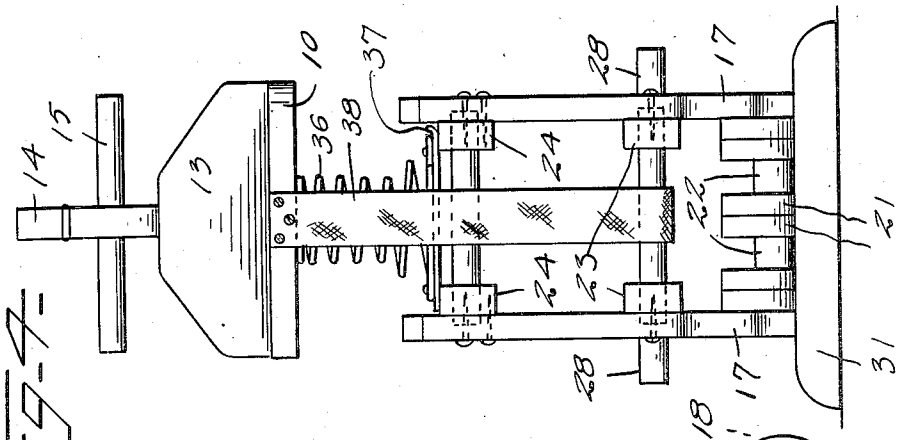


Fig. 4.

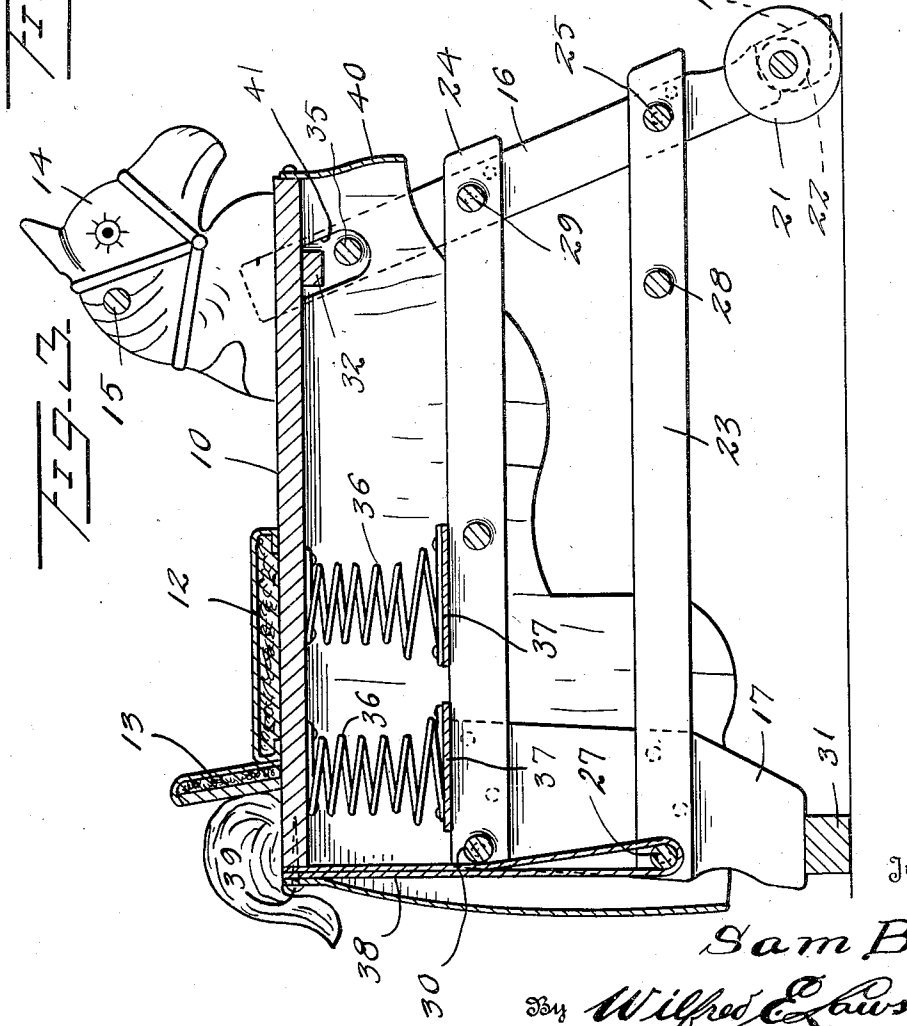


Fig. 3.

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2,423,474

MECHANICAL HORSE

Sam Belz, Memphis, Tenn.

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8 Claims. (Cl. 272—52)

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This invention relates generally to the class of toys or amusement device designed primarily for the use of children and pertains particularly to an improved play or hobby-horse.

A principal object of the present invention is to provide a mechanical horse of novel construction, which may be formed practically entirely of non-critical materials and which, at the same time, is so constructed as to enable a rider to imitate many of the movements followed in the riding of a living horse.

Another object of the invention is to provide a device of the character stated which is of strong and durable construction and which may be easily and quickly assembled or set up and produced substantially entirely from non-metallic materials.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of the specification, with the understanding, however, that the invention is not confined to a strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in side elevation of a mechanical horse constructed in accordance with the present invention.

Figure 2 is a top plan view of the same.

Figure 3 is a vertical longitudinal section taken upon the line 3—3 of Figure 2.

Figure 4 is a view in rear elevation with the skirt removed.

Figure 5 is a view partly in section and partly in elevation of the front legs and the connections of adjacent parts thereto.

Figure 6 is a detail view partly in section and partly in elevation showing the connection of the body with the front legs.

Referring now more particularly to the drawings wherein like numerals of reference indicate corresponding parts throughout the several views, the numeral 10 generally designates the body of the horse which is here illustrated as being formed from a single flat board of suitable length.

The side edges of the body 10 are cut inwardly from points to one side of the transverse center of the body and to the opposite end as indicated at 11 so that the forward end portion or front of the body is of gradually reduced width

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whereas the maximum width of the body is at the rear. This is clearly illustrated in Figure 2.

Upon the top of the body at the rear or part of maximum width, there is fixed a seat pad 12, at the rear of which is the low upwardly and rearwardly inclined padded back 13.

Upon the top of the forward or front part of the body 10 there is fixed the carved horse head 14. This is preferably formed from a piece of material of uniform thickness as shown in Figure 2 and there is extended through this head body the dowel 15 which provides hand grips upon both sides of the head, for the rider.

The numeral 16 designates the front legs while the rear legs are designated 17. The front legs 16 are of materially greater length than the rear legs and are disposed in spaced parallel relation upon opposite sides of the front of the body 10 to extend forwardly and downwardly from the body.

At their lower ends the legs 16 are suitably shaped or curved to represent hoofs 18 and between the hoofs extends a dowel 19, the ends of which may be sunk into the inner sides of the legs as indicated at 20 in Figure 5. Upon this dowel, wheels or rollers 21 are mounted, which are maintained in spaced relation by suitable separator blocks 22.

The front and rear legs of the horse are connected by the horizontal pairs of bars 23 and 24. The bars forming the lower pair are designated 23 while those forming the upper pair, which overlie the lower bars 23, are designated 24.

As shown the pairs of longitudinally extending bars 23 and 24 are disposed at their forward and rear ends against the inner sides of the front and rear legs.

The front ends of the lower bars 23 are connected by the transverse dowel 25 which extends through them into the legs as shown in Figure 5 and these dowels together with the adjacent bars and legs are connected together by fastening devices 26 in the form of nails, screws or the like.

At the rear end of the bars 23 a similar dowel 27 connects the rear legs and the bars 23 together and this dowel has a further function as will be hereinafter described.

Rearwardly of the dowel 25 the bars 23 are connected by the footrest forming dowel 28 which passes through and beyond the outer sides of the bars 23 as shown in Figure 4.

The upper pair of bars 24 likewise have extending therebetween the front and rear dowels 29 and 30, respectively, which pass through the

bars and into the adjacent legs where they are secured by suitable fastening devices 26. In addition to those fastening devices which enter the ends of the dowels as shown in Figure 5 other devices may be extended through the legs and the adjacent bars as illustrated in this figure or any other suitable means may be employed for securing the bars and legs rigidly together.

As shown in Figure 3, the rear legs are of substantial width and are disposed vertically so that they will effectively and safely support a heavy weight. At their lower ends these legs are joined together by the horizontal foot or base piece 31 which rests upon the floor.

As shown the body 10 is spaced a substantial distance above the top bars 24 and, as previously stated, the front legs 16 extend upwardly upon opposite sides of the body.

Extending across the underside of the front end of the body 10 is the bar 32, the ends of which are turned to form the trunnions 33 which, as shown in Figure 6, position in suitable bearing sockets 34 formed in the adjacent inner faces of the legs 16. Beneath this bar a reenforcing dowel 35 is interposed between the upper ends of the legs. This prevents any binding of the legs against the ends of the bar 32 in the event of deformation of the legs due to warping or the like.

Resting upon and supported by the upper bars 24 beneath the wide portion of the body 10 is a pair of coil springs 36, the upper ends of which press against the underside of the body as shown in Figure 3. These springs are secured at their upper and lower ends respectively, to the body 10 and the bars 24 and disposed beneath the springs and connecting across between the bars 24 are webs 37.

The springs 36 are under compression at all times and therefore, constantly exert an upward thrust upon the rear end of the body. However, the upward movement of the rear end of the body is limited by the strap 38 which is looped around the dowel 27 and has its free ends secured as indicated at 39 to the back edge of the body 10 as shown in Figure 3. The strap is, accordingly, maintained tight at all times when the body is unoccupied and it is drawn tightly across the dowel 30 which lies between the body 10 and the dowel 27 to which the strap is connected.

In order to give a desirable form to the horse and also to cover the spring 36 and the rear legs and ends of the bars 23 and 24, there is secured around the edge of the body 10 the skirt 40. The rear part of the skirt is of materially greater length than the front part so that the major portion of the rear legs 17, together with the movement limiting strap 38, will be covered.

From the foregoing, it will be readily apparent that a person seated astride the body 10 upon the seat 12, can readily simulate the riding movements of a horseman by giving an up and down motion to the body while holding on to the handle or hand grip 15 and having the feet resting on the footrest or support 28. This will cause the alternate compression and expansion of the springs 36 which will cause the body 10 of the horse to follow the movements of the rider's body. In this manner use may be made of the mechanical horse not only as a source of amusement but as a source of healthful exercise.

In order to allow for the movement of the body 10 without interference from the skirt 40, the sides of the skirt at the front are cut away as

indicated at 41 to permit the bar 32 and dowel 35 to extend therethrough.

I claim:

1. A mechanical horse comprising a relatively long flat body member, a pair of front legs arranged into spaced parallel relation and having one end of the body member disposed therebetween at their upper ends, said legs extending downwardly and forwardly from the front end of the body member, a horizontal pivotal connection between the front legs and the interposed end of the body member, a pair of substantially vertical rear legs disposed beneath the rear end of the body member, the rear legs being spaced a substantial distance below the body member, horizontal bars connecting the front and rear legs together, transverse connecting members between the front legs and the ends of the horizontal bars adjacent thereto, transverse connecting members between the rear legs and the ends of the bars adjacent thereto, spring means connecting the rear end of the body member with the underlying rear legs and exerting an upward thrust against the rear end of the body member, and means connecting the rear end of the body member with one of the transverse connecting means between the rear legs for limiting the upward movement of the rear end of the body member.

2. A mechanical horse as set forth in claim 1, with a bar member extending transversely of and supported by a pair of the bar members, rearwardly of and adjacent to the front legs and providing a footrest.

3. A mechanical horse as set forth in claim 1, with roller members supported between the lower ends of the front legs, and a foot bar disposed across and connecting the lower ends of the rear legs.

4. A mechanical horse comprising a relatively long flat body member having a front end of reduced width, an upstanding body simulating a horse's head supported upon the top of the body member at said front end, a seat supported upon the top of the body member adjacent to the rear end, a pair of front legs having the front end of the body member disposed between the upper ends thereof, the legs extending downwardly and forwardly with respect to the front end of the body member, a bar secured across the underside of the front end of the body member and having its ends extending beyond the sides of the body member and formed to provide trunnions, said trunnions having pivotal connection in the adjacent legs whereby the rear end of the body member is supported for vertical movement, a pair of rear legs disposed beneath the rear end of the body member and having their upper ends spaced a substantial distance from the body member, horizontally disposed bars connecting the front and rear legs together, a coil spring supported upon a pair of said bars adjacent to the rear legs and connecting the rear end of the body member with the legs, a cross connecting member between the rear legs, and a movement limiting strap connecting the cross connecting member with the rear end of the body member whereby upward movement of the body member under the influence of the spring means is limited.

5. A mechanical horse of the character stated, comprising a pair of substantially vertical rear leg members, a pair of front leg members of materially greater length than the rear leg members and disposed at an inclination from the vertical with the lower ends farther removed from the rear legs than the upper ends, a relatively

long body member having one end disposed between the upper ends of the front legs, a pivotal connection between the body member and the front legs for the vertical oscillation of the other end of the body member, the said other end of the body member being spaced from the upper ends of the rear legs, a coil spring connected between the said other end of the body member and the rear legs, a transverse connecting member between the rear legs, and a movement limiting strap connecting said transverse member with the said other end of the body member and functioning to limit the upward movement of said other end of the body member.

6. A toy horse comprising a horizontal rectangular frame like structure consisting of longitudinal side bars and transverse connecting members, a pair of rear legs connected to one end of said frame and terminating at their upper ends at the top of the frame, a pair of front legs of materially greater length than the rear legs and attached to opposite sides of the frame at the opposite end, the front legs extending downwardly and forwardly from the frame and having their upper ends extended a substantial distance above the plane of the frame, a seat board overlying and spaced from said frame and having one end extended between the upper ends of the front legs, means pivotally coupling the front end of the seat board with the adjacent front legs for oscillation on a horizontal axis, webs extending transversely of said frame adjacent to the rear end thereof between and connected with the said side bars, spring members supported upon said webs and supporting upon their upper ends the

rear portion of the seat board, and a flexible member connected between the rear end of the seat board and the rear legs, the connection of the flexible member with the rear legs being at a level a substantial distance below the level of the frame.

7. A toy horse of the character stated in claim 6 with a lower frame comprising longitudinal side bars and transverse members disposed between the first frame and the connecting front and rear legs, the said flexible member being attached to a transverse member of the second mentioned frame, and foot rests carried by the second mentioned frame and extending laterally from the sides thereof.

8. A toy horse structure of the character stated in claim 6, with a rigid support bar extending transversely between and across the lower ends of the rear legs, a dowel extending transversely between the lower ends of the front legs, and rollers carried upon the said dowel.

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