Jan. 14, 1936. F. ANDERSON 2,027,759

FIGURE TOY

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Fig. 1.

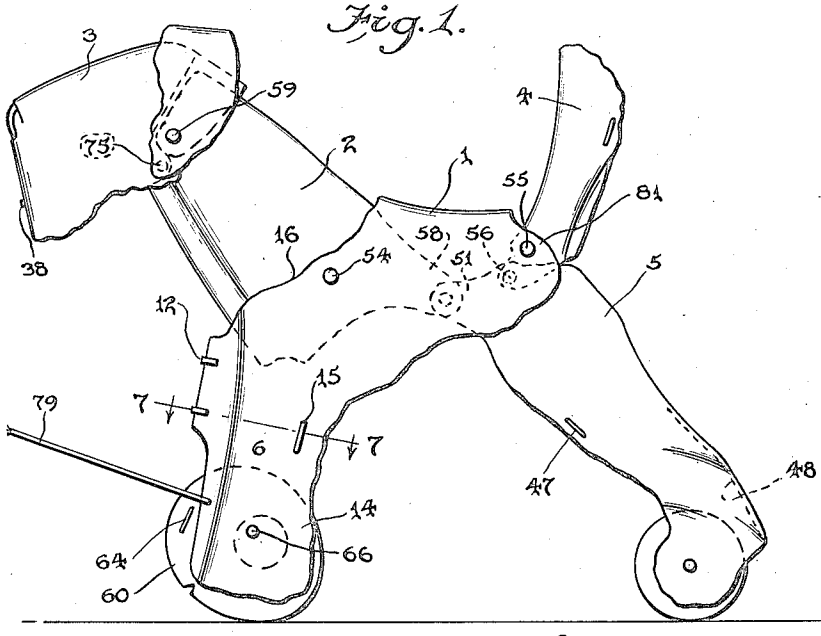
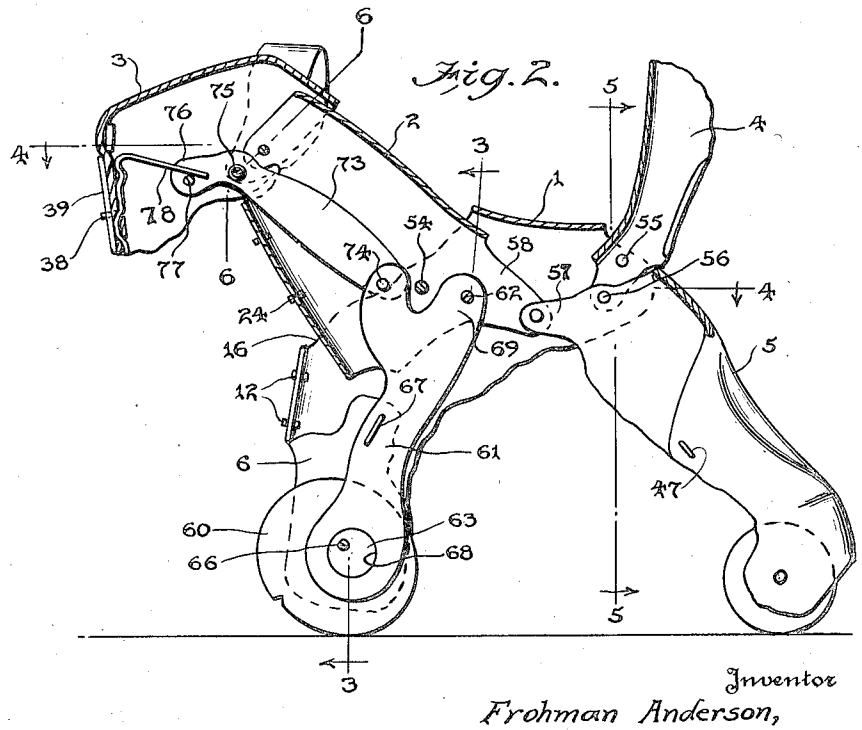


Fig. 2.



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FIGURE TOY

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Fig. 3.

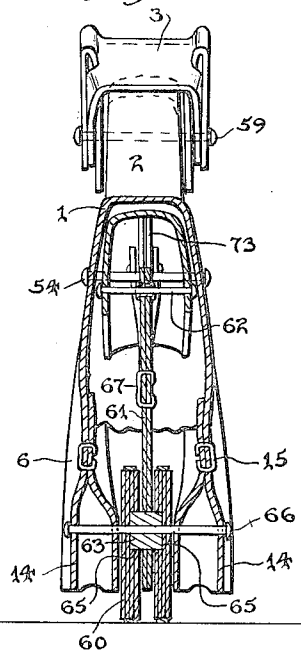


Fig. 6.

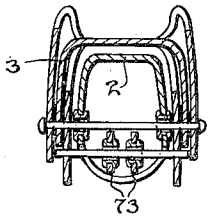


Fig. 5.

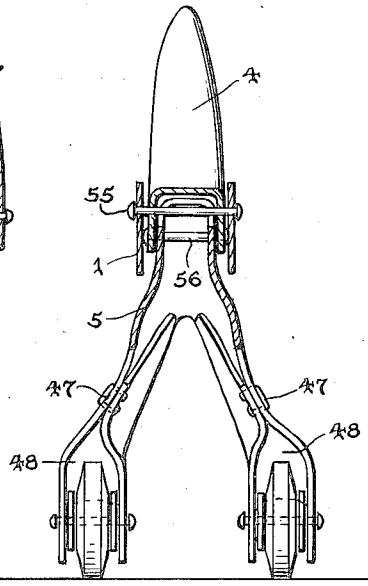


Fig. 4.

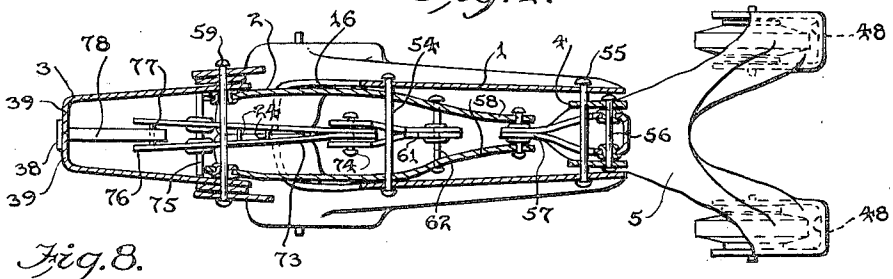


Fig. 8.

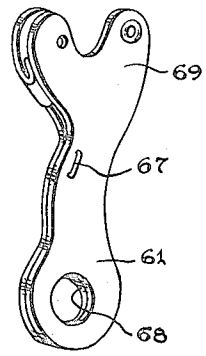


Fig. 14.

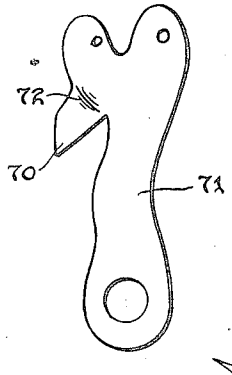
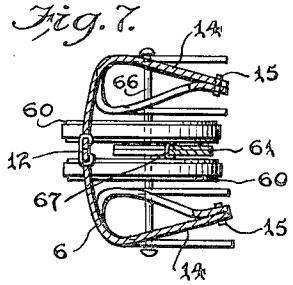


Fig. 7.



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FIGURE TOY

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Fig. 9.

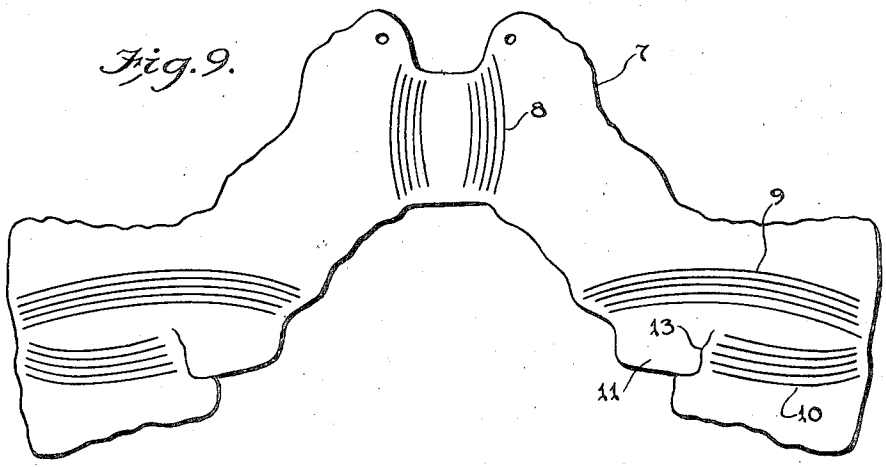


Fig. 10.

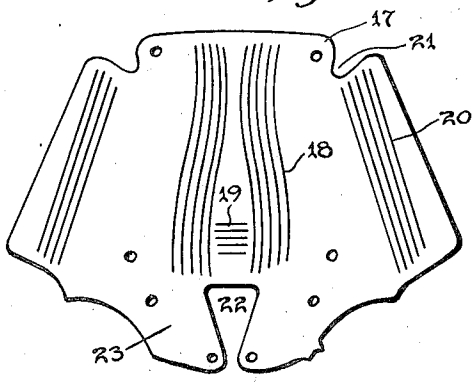


Fig. 11.

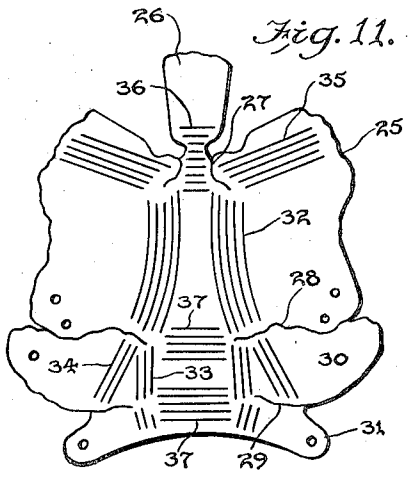


Fig. 12.

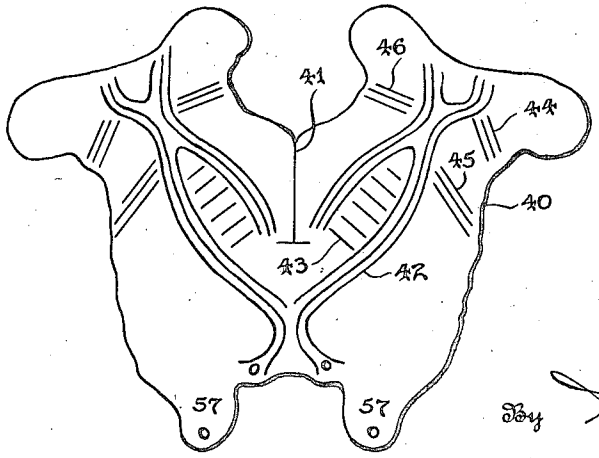
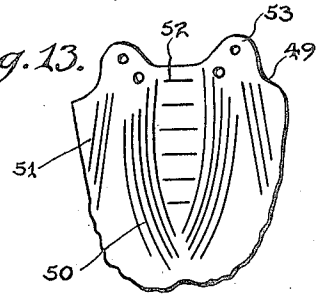


Fig. 13.



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Patented Jan. 14, 1936 2,027,759

UNITED STATES PATENT OFFICE

2,027,759

FIGURE TOY

Frohman Anderson, Detroit, Mich.

Application December 5, 1933, Serial No. 701,072

23 Claims. (Cl. 46—105)

The invention relates to a toy dog.

The object of the present invention is to improve the construction of figure toys and to provide a simple, practical and inexpensive wheeled toy dog of relatively strong and durable construction comprising a body having a pivoted neck, a pivoted head, a pivoted tail, and pivoted rear legs, and adapted when drawn along a supporting surface to impart an upward and downward movement to the body and pivotal movement to the head, neck, rear legs and tail, and at the same time intermittently operate a sound producing device, whereby the movements of the figure toy will simulate those of a dog.

A further object of the invention is to provide a toy dog of this character in which the body, neck, head, pivoted legs, tail and most of the mechanical elements may be easily and cheaply constructed of cardboard.

Another object of the invention is to provide a toy dog equipped with a cam traction wheel adapted to actuate the pivoted members of the body and raise and lower the latter, and capable of absorbing and storing energy during a portion of a revolution and of expending such energy during another portion of such revolution, whereby when the neck and head of the dog swing downwardly, energy will be absorbed or stored to assist in moving the head and neck upwardly for insuring a proper operation of the toy dog on a supporting surface where a minimum traction friction exists.

Another object of the invention is to provide an improved linkage for operating or actuating the pivoted members of the toy dog adapted to be applied to toys representing or simulating a variety of animals and capable of operating a sound device so that an animal voice or sound will be emitted by the toy periodically during the operation of the same.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a side elevation of a toy dog constructed in accordance with this invention.

Fig. 2 is a longitudinal sectional view of the same.

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 2.

Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 2.

Fig. 6 is a detail transverse sectional view on the line 6—6 of Fig. 2.

Fig. 7 is a horizontal sectional view on the line 7—7 of Fig. 1.

Fig. 8 is a detail perspective view of a crank actuated link.

Fig. 9 is a plan view of the body blank before bending.

Fig. 10 is a similar view of the neck blank.

Fig. 11 is a plan view of the head blank before bending.

Fig. 12 is a plan view of the blank from which the rear legs of the dog are formed.

Fig. 13 is a plan view of the tail blank.

Fig. 14 is a plan view of the blank of one of the sections of the crank actuated link.

In the accompanying drawings is illustrated the figure toy representing a dog comprising a body 1, a pivoted neck 2, a pivoted head 3, a pivoted tail 4 and pivoted rear legs 5. The body 1 which is provided with integral front legs 6 is formed from a blank 7 consisting of a single piece of cardboard die cut to the form illustrated in Fig. 9 of the drawings. The body blank 7 which is approximately V-shaped is provided at its inner face at opposite sides of the center with spaced groups 8 of curved crease lines on which the blank is bent transversely to form two sides and the rear integral connecting portion. The sides of the blank are provided at their end portions with spaced groups 9 and 10 of curved crease lines on which the sides are folded or bent longitudinally to form a pair of front legs and front abutting portions 11 which are secured together in abutting relation by metal stitches or staples 12. The group 10 of curved crease lines extend from the end of the side portions of the body blank and terminate midway the length of the crease lines 9 and the said side portions of the blank are split at 13 adjacent the inner ends of the crease lines 10 to permit the terminal portions of the sides to be folded to form hollow legs 14. The cuts 13 are approximately L-shaped, as clearly illustrated in Fig. 9 of the drawings, the major portion of the length of the cuts being disposed transversely of the side portions of the blank.

The inner sides of the hollow legs are secured at the tops to the outer sides by metal stitches or staples 15. The crease lines, as explained in my copending application filed September 5, 1933, Serial No. 688,225, are arranged at the inner face of the blank and extend partially through the same, leaving uncut layers of the material of the blank at the exterior of the same when the blank is folded to form the body.

None of the material is cut from the blank in the formation of the crease lines and the material at the crease lines is compressed by the bending or folding of the blank so that a strong rigid structure having an unbroken exterior is provided at each fold or bend of the blank.

The hollow body 1 defines a neck receiving opening 16 in which is arranged the pivotally mounted neck which is hollow. The hollow neck 2 is constructed from a single piece or blank 17 of cardboard or similar material, and it will be understood that when the term "cardboard" is employed that fibre board or any other suitable material of this character may be used. The blank which is approximately rectangular is slightly tapering, as clearly shown in Fig. 10 of the drawings, and it is provided at opposite sides of the center with groups of curved crease lines 18 having a slight compound curve, the groups diverging slightly at one end and converging slightly at the other end. The group of transverse crease lines 19 is arranged between the curved converging portions of the groups to render the material more pliable and to facilitate bending or folding of the same into tubular formation. The blank 17 is provided at its side portions with groups 20 of straight crease lines arranged at an angle and diverging towards the bottom of the neck to provide a tapering neck when the blank is folded, as clearly illustrated in Figs. 1 and 2 of the drawings. The blank is provided at opposite sides of the top portion with recesses 21 and at the bottom with a central tapering cutout or recess 22 forming longitudinal extensions 23.

The blank is folded longitudinally on the crease lines into tubular form with the side edges adjacent the crease lines 20 abutting at the front of the neck. The abutting edges are secured together at intervals by metal stitches or staples 24. The bending or folding of the blank 17 forms an upward tapered neck, as clearly illustrated in Figs. 1 and 2 of the drawings, and the pivoted head 3 extends forwardly from and is mounted on and receives the upper end of the neck, as clearly shown in Fig. 2 of the drawings. The hollow head which is of hood shaped formation consists of a substantially rectangular blank 25 provided at one end with a longitudinal extension 26 and provided at the inner end of the extension 26 with longitudinal cuts 27 located at opposite sides of the extension and extending longitudinally thereof for increasing the length of the same. The blank 25 is provided at the other end at opposite sides with spaced transverse cuts 28 and 29 forming laterally extending tabs 30 and 31. The blank 25 is provided at its inner face with spaced longitudinal groups of crease lines 32, each group having divergent rear portions 33 and 34 at one end. The blank is provided at the other end with transverse groups of crease lines 35 extending from the adjacent ends of the longitudinal crease lines 32. The extension 26 of the blank is provided at its inner portion with spaced transverse crease lines 36, and transverse groups of crease lines 37 are arranged between the longitudinal crease lines adjacent the inner ends of the tabs 30 and 31. The blank 25 is bent to form spaced sides and a connecting top portion and the front extension is bent to form a nose portion and is extended downwardly between and below the adjacent ends of the sides and the front terminals of the latter are folded over the said extension and are secured to the same by a metal stitch 38 which connects the inwardly folded terminal portions 39 of the sides of the head.

The outer lateral extensions or tabs 31 are bent inwardly and extend to the side portions of the head, while the inner lateral extensions or tabs 30 are arranged exteriorly of the said outer tabs 31 and are bent to form ears for the head of the dog and are secured to the side portions of the said head.

The pivoted rear legs consist of a blank 40 of cardboard provided at one end with a central longitudinal split or cut 41 and having diverging groups 42 of curved crease lines extending longitudinally of the blank at opposite sides of the split portion. The groups of crease lines 42 extend from one end of the blank centrally thereof and are arranged in approximately V-shape and each group is divided at the inner and outer portions, as clearly illustrated in Fig. 12 of the drawings. Spaced straight transverse crease lines 43 are arranged at intervals between the inner divided portions of the crease lines 42 and groups of straight transverse crease lines 44, 45 and 46 are located at opposite sides of the groups of crease lines 42 for increasing the flexibility of the cardboard. The blank 40 is folded or bent on the longitudinal crease lines to supply a pair of hollow diverging legs. The sides of the hollow legs are secured together intermediate of the ends of the legs by metal stitches or staples 47 and the lower portions of the legs 5 form wheel receiving pockets 48.

The pivoted tail 4 which is hollow consists of a substantially oblong blank 49 provided with central groups of curved longitudinally disposed crease lines 50 diverging from one end of the blank which is provided with groups 51 of straight crease lines at the side portions diverging in the opposite direction from the curved crease lines. The blank is provided between the central groups of curved crease lines with widely spaced straight transverse crease lines 52 to facilitate shaping the tail and the blank disposed longitudinally on the crease lines 50 and 51 to form a tapering hollow tail which has a curvature resulting from the crease lines 50 and 52. The blank 49 is provided at one end with spaced segmental extensions 53 located at opposite sides of the center of the adjacent end of the blank and located at the base of the tail when the material is folded.

The body of the toy is provided with fixed front and rear pivots 54 and 55. The hollow neck 2 is mounted on the front pivot and the tail 4 is mounted on the rear pivot 55. The spaced extensions 53 of the hollow tail extend below the fixed pivot 55 and receive a pivot 56 on which the rear legs are mounted. The sides of the rear legs are provided at the top with extensions 57 formed by spaced extensions of the blank 40, as clearly illustrated in Fig. 12 of the drawings, and the said extensions 57 which project forwardly are pivoted between rear extensions 58 of the sides of the neck 2.

The extensions 53 of the tail, 57 of the rear legs and 58 of the neck form a linkage for connecting the rear legs and tail so that when one of the parts is actuated, motion will be communicated to the other part connected by the linkage.

The head 3 is connected to the neck by a pivot 59 which passes through the tabs 30 and 31 and secures the same to the sides of the head. Motion is communicated from the traction wheel 60 to the pivoted members of the toy by means of an actuating link 61 having a crank connection or eccentric connection with the wheel and extending upwardly therefrom to the neck and connected to the same in rear of the pivot 54 by means of a pivot 62 extending across the space between the sides of the neck and passing through the link 61 at the top thereof. The traction wheel consists of spaced laminated sections and a connecting cylindrical block 63 of wood or other suitable material. Each section of the wheel is composed of a plurality of disks or cam shaped pieces of cardboard, preferably four in number, but any desired number may, of course, be employed. The disks are secured together by metal stitches or staples 64 and the two inner disks of each section are provided with circular eccentrically arranged openings forming sockets 65 in which the ends of the cylindrical connecting and spacing block are secured by adhesive material, or any other suitable fastening means. The traction wheel is mounted between the fixed front legs on an axle 66 which passes through the traction wheel eccentrically of the cylindrical block, as clearly illustrated in Fig. 2 of the drawings.

The actuating link 61 is preferably composed of two sections secured together intermediate of their ends by a metal stitch or staple 67 and provided at the lower end with the circular opening 68 through which passes the cylindrical connecting and spacing block which forms a crank element for actuating the link when the traction wheel rolls on a floor or other supporting surface. The upper end of the link is approximately Y-shaped to form front and rear arms 69 which are located in advance and in rear of the fixed pivot 54, the space between the arms providing a clearance for the fixed pivot 54. One of the sections of the link is provided with a tab extension 70 and the blank 71 from which the section is formed is provided with a group of straight transverse crease lines 72 extending across the inner portion of the tab 70 and the adjacent portion of the link and adapted to permit the tab to be bent inwardly between the sections of the actuating link to provide a space for a link or lever 73 located within the hollow neck and connected at its lower end by a pivot 74 to the front arm of the actuating link 61. The link or lever 73 is connected at its upper portion to the pivoted head by a transverse pivot 75 which extends across the pivoted head and pierces the sides thereof, the terminals of the pivot being preferably located between the terminals of the tabs 30 and being retained in place by the same. The link or lever extends beyond the pivot 75 to provide a lever arm 76 provided with a transverse pin 77 which is arranged to flex a voice spring 78 constituting a sound producing device and mounted on the head interiorly thereof at the front end of the same, as clearly illustrated in Fig. 2 of the drawings.

The sections of the lever 73 are spaced apart at the lever arm 76 by the transverse pin 77 and in each movement of the arm 76, which is oscillated in the operation of the toy, the spring is flexed and released and emits a sound.

The traction wheel which may be circular or substantially circular, is preferably of cam shape, as shown, to cooperate with the body of the toy and the neck for storing energy during a portion of the operation of the toy and for expending the energy during another portion of the operation of the toy so that the toy will operate properly with a minimum traction friction and on comparatively smooth surfaces. The wheel is rotated by pulling the toy by a cord 79 having portions 80 connected to the front legs and during the rotation of the wheel the axle or axis of the wheel is raised and lowered and during the period that the axis of the wheel is moving upwardly and carrying with it the body of the toy and the parts supported by the same, the neck and head are swinging downwardly and when the neck is moving upwardly the axis of the wheel and the body of the toy are moving downwardly to assist in raising the neck and the head. The link 61 simultaneously actuates the lever 73 and imparts motion to the neck, the pivoted rear legs and the tail through the linkage formed by the extensions 53, 57 and 58. The lever 73 constitutes a link for imparting motion to the head and at the same time oscillates the lever arm 76 and operates the sound producing device. The sound producing device is operated twice during each complete revolution of the traction wheel, but instead of employing a spring mounted in the head of the dog, any other suitable sounding device or arrangement thereof may, of course, be provided.

The mechanical portions of the toy are concealed within the hollow body and the hollow members thereof, and the said hollow body is provided at its rear end with extensions 81 located at opposite sides of the hollow body at the rear end thereof and receiving the lower end of the hollow tail and concealing the same and the pivotal connection between the tail and the rear legs.

What is claimed is:

1. A figure toy comprising a body provided with rigid front legs, a neck pivoted to the body, pivoted rear legs connected to the body and pivoted to and directly actuated by the neck, a traction wheel mounted on the front legs, and a crank connection between the traction wheel and the neck for imparting movement to the neck and the rear legs.

2. A figure toy comprising a body having rigid front legs, a neck pivoted to the body, pivoted rear legs connected with the body and pivoted directly to and actuated by the neck, a head pivotally mounted on the neck, a traction wheel mounted on the front legs, crank means actuated by the traction wheel for imparting motion to the neck and the rear legs, and a link connection between the crank connection and the head for imparting pivotal movement to the same with respect to the neck.

3. A figure toy comprising a body having rigid front legs, a neck pivoted to the body, pivoted rear legs connected with the body and pivoted directly to and actuated by the neck, a head pivotally mounted on the neck, a traction wheel mounted on the front legs, crank means actuated by the traction wheel for imparting motion to the neck and the rear legs, a link connection

between the crank connection and the head for imparting pivotal movement to the same with respect to the neck, said link connection being provided with a lever arm located within the head, and a sounding device mounted within the head and arranged to be operated by the lever arm.

4. A figure toy comprising a body having rigid front legs, a neck pivoted to the body at the front thereof, a tail pivotally connected to the body at the rear thereof, rear legs pivotally mounted on the tail and the neck, a traction wheel mounted on the front legs, and crank means actuated by the traction wheel for imparting motion to the neck, the rear legs and the tail with respect to the body.

5. A figure toy comprising a body, a neck pivoted to the body at the front thereof, a tail pivoted to the body at the back of the same, and having a depending extension projecting beyond the pivot of the tail, rear legs pivoted to the said extension of the tail and also pivoted directly to the neck, a traction wheel mounted on the front legs, and crank means actuated by the traction wheel for imparting motion to the neck, the rear legs and the tail with respect to the body of the toy.

6. A figure toy comprising a body having rigid front legs, a tail pivoted to the body and having a depending extension, rear legs pivoted to the depending extension of the tail, a neck pivoted to the body at the front thereof and connected with the rear legs, a traction wheel mounted on the front legs and provided with a crank element, and a link actuated by the crank element and extending to the neck and pivoted to the same for imparting motion to the neck, the rear legs and tail with respect to the body.

7. A figure toy comprising a body having rigid front legs, a tail pivoted to the body and having a depending extension, rear legs pivoted to the depending extension of the tail, a neck pivoted to the body at the front thereof and connected with the rear legs, a traction wheel mounted on the front legs and provided with a crank element, a link actuated by the crank element and extending to the neck and pivoted to the same for imparting motion to the neck, the rear legs and tail with respect to the body, a head pivoted to the neck, and a second link extending from the said actuating link to the head for moving the same with respect to the neck when the wheel is rotated.

8. A figure toy comprising a body having front and rear pivots, a neck mounted on the front pivot and having a rearwardly projecting extension, a tail mounted on the rear pivot and having a depending extension, rear legs pivoted to the said extensions of the neck and the tail, a head pivotally mounted on the neck, a traction wheel having a crank element, an actuating link connected with the crank element and with the neck, and a second link extending from the crank link to the head.

9. A figure toy comprising a body having front and rear pivots, a neck mounted on the front pivot and having a rearwardly projecting extension, a tail mounted on the rear pivot and having a depending extension, rear legs pivoted to the said extensions of the neck and the tail, a head pivotally mounted on the neck, a traction wheel having a crank element, an actuating link connected with the crank element and with the neck, a second link extending from the crank link to the head, and provided with a lever arm located within the head, and a sound producing device mounted within the head and arranged to be actuated by the lever arm.

10. A figure toy comprising a body having rigid front legs, a neck pivoted to the body, pivoted rear legs connected to the body, a traction wheel located between the front legs and composed of spaced wheel sections and an eccentrically arranged cylindrical member connecting the wheel sections, and an axle passing eccentrically through said cylindrical member and constituting the axis of rotation of the wheel and enclosed by the cylindrical member and an actuating link connected with the cylindrical member and with the neck for imparting motion to the neck and the rear legs with respect to the body.

11. A figure toy comprising a body having rigid front legs, a neck pivoted to the body, pivoted rear legs connected to the body, a traction wheel located between the front legs and composed of spaced wheel sections and an eccentrically arranged cylindrical member connecting the wheel sections, and an axle passing eccentrically through said cylindrical member and constituting the axis of rotation of the wheel and enclosed by the cylindrical member and an actuating link having a circular opening receiving the eccentric member of the wheel, said link extending from the wheel to the neck and pivoted to the latter.

12. A figure toy comprising a body having rigid front legs and provided with fixed front and rear pivots, a neck mounted on the front pivot and provided with a rearwardly projecting extension, a tail mounted on the rear pivot and having a depending extension, rear legs pivotally connected to the extensions of the neck and the tail, a traction wheel mounted on the front legs and composed of spaced wheel sections, and an eccentrically arranged cylindrical member connecting the wheel sections and spacing the same, an actuating link connected with and actuated by the eccentric member of the wheel and extending therefrom to the neck and pivoted to the latter for moving the neck, the rear legs and the tail with respect to the body.

13. A figure toy comprising a body having rigid front legs and provided with fixed front and rear pivots, a neck mounted on the front pivot and provided with a rearwardly projecting extension, a tail mounted on the rear pivot and having a depending extension, rear legs pivotally connected to the extensions of the neck and the tail, a traction wheel mounted on the front legs and composed of spaced wheel sections, an eccentrically arranged cylindrical member connecting the wheel sections and spacing the same, an actuating link connected with and extending upwardly from the eccentric member of the wheel and provided at its upper end with front and rear arms, the rear arm being pivotally connected to the neck in rear of the front fixed pivot and the front arm extending in advance of the pivot, a head pivoted to the neck, and a link pivoted to the said front arm and extending therefrom to the head and pivoted to the latter.

14. A figure toy comprising a toy body constituting a portion of the toy figure and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel operated actuating mechanism connected to one of said links, and oscillating figure members mounted on cer-

tain of the said links and actuated by the same, said toy body having oscillatory movement with respect to other portions of the toy figure.

15. A figure toy comprising a toy body constituting a portion of the toy figure and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel-operated actuating mechanism connected to one of said links and oscillating figure members mounted on certain of said links and actuated by the same and also having pivotal mounting on the toy body, said toy body having oscillatory movement with respect to other portions of the toy figure.

16. A figure toy comprising a body having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the links, wheel operated actuating mechanism connected directly to the last mentioned link, front and rear oscillating figure members directly connected with certain of said links and actuated by the same and pivoted independently of the pivots of said links.

17. A figure toy comprising a body having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, and oscillating head and tail figure members connected directly with certain of said links and actuated by the same and also having pivotal mounting on the body.

18. A figure toy comprising a body having front and rear pivots, front and rear links mounted on said pivots, said body being disposed between said links and arranged diagonally with relation thereto, a link pivotally connected to the said links, wheel operated actuating mechanism connected directly to the last mentioned link, and oscillating figure members connected directly with certain of said links and actuated by the same and also having pivotal mounting on the body.

19. A figure toy comprising a body having front and rear pivots, front and rear links mounted on said pivots, said body being relatively short and disposed diagonally with relation to the front and rear links, a link pivotally connected to the said links, wheel operated actuating mechanism connected directly to the last mentioned link, and head and tail oscillating figure members directly connected with the two first mentioned links and actuated by the same and also pivoted on the body independently of the pivots of any of the links.

20. A figure toy comprising a toy body constituting a portion of the toy figure and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel operated actuating mechanism connected to one of said links, and oscillating figure members mounted on certain of the said links and actuated by the same, said toy body having oscillatory movement with respect to other portions of the toy figure and one of the figure members floating between two of the said links.

21. A figure toy comprising a toy body constituting a portion of the toy figure and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel operated actuating mechanism connected to one of said links, and oscillating figure members mounted on certain of the said links and actuated by the same, said toy body having oscillatory movement with respect to other portions of the toy figure and one of the figure members being indirectly connected with the toy body by said links.

22. A figure toy comprising a toy body constituting a portion of the toy figure and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel operated actuating mechanism connected to one of said links, and oscillating figure members mounted on certain of the said links and actuated by the same, said toy body having oscillatory movement with respect to other portions of the toy figure and one of the figure members being supported by two other figure members.

23. A figure toy comprising a toy body constituting a portion of the figure toy and having front and rear pivots, front and rear links mounted on said pivots, a link pivotally connected to the said links, wheel operated actuating mechanism connected to one of said links, oscillating figure members mounted on certain of said links and actuated by the same, and a figure member extending from and fixed with relation to the toy body and movable therewith.

FROHMAN ANDERSON.