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S. C. BOYCE

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TOY FIGURE MANIPULATING MEANS

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FIG. 1.

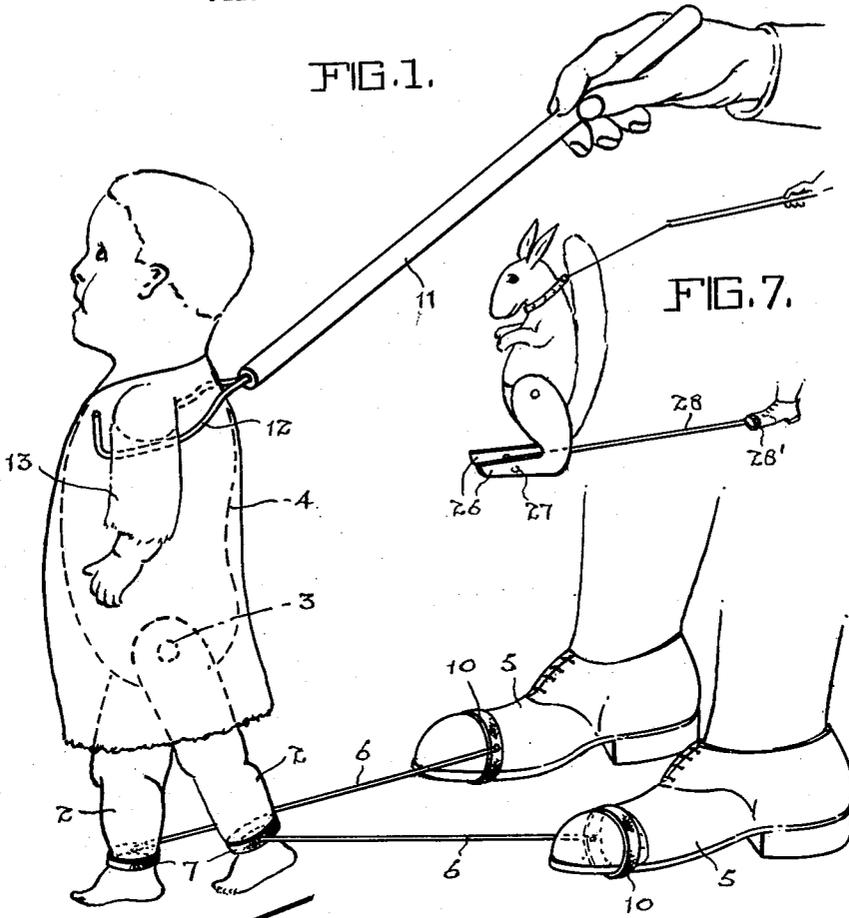


FIG. 7.

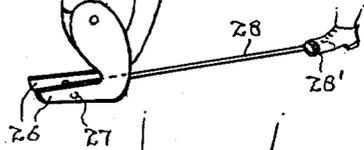


FIG. 2.

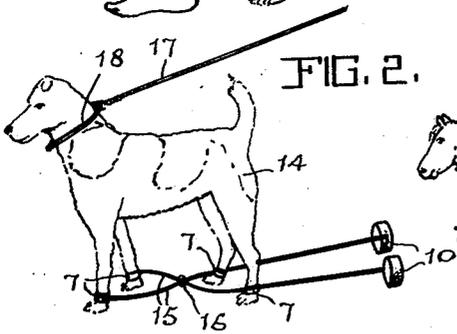


FIG. 3.

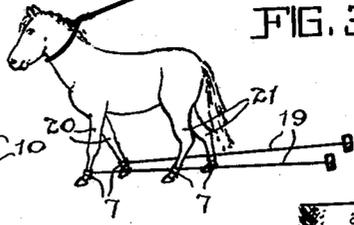


FIG. 5.

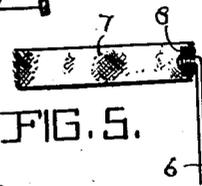


FIG. 4.

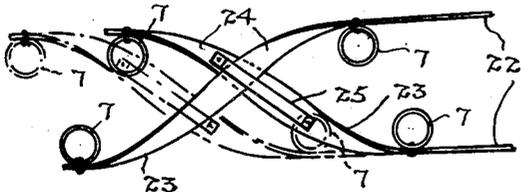
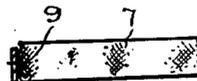


FIG. 6.



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2,624,155

TOY FIGURE MANIPULATING MEANS

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1

This invention relates to the animation of toy figures and the principal object of the invention is to enable a doll, animal or other figure capable of being manipulated to walk and move in an extremely life-like manner, and to enable the animated figure to lead the person causing its manipulation without any apparent means of actuation therebetween.

A further important object is to provide a device for manipulating the toy figure, which device will be exceedingly inexpensive and can be readily and quickly attached to any figure capable of having its legs moved with respect to its body.

The principal feature of the invention consists in providing a pair of longitudinally rigid operators with means at each end thereof to afford a swivel connection with the feet of a figure to be animated and the feet of a person wishing to manipulate the figure, to enable movement of the manipulator's feet to be transferred into corresponding walking movements of the figure in lead of the manipulator.

A further important feature consists in forming the longitudinal rigid operators to provide a cross-over scissor-like arrangement to enable a four-footed figure to be manipulated with the correct walking action.

Referring to the accompanying drawings,

Figure 1 is a perspective view of a figure being animated in accordance with this invention.

Figure 2 is a perspective view on a reduced scale of a dog being manipulated with a pair of cross-over operators to provide the correct walking action.

Figure 3 is an elevational view of a toy horse having operators connected thereto for causing its manipulation.

Figure 4 is an enlarged plan view of a modified form of the operators to provide the cross-over action for manipulating a four-footed toy figure.

Figure 5 is an enlarged detail of one method of fastening the flexible foot connectors to the rigid operators.

Figure 6 is a detail of an alternative form of fastening means showing the means of connecting the rigid operators to the feet as simply an elastic stapled thereto.

Figure 7 is a perspective view of a kangaroo having the legs connected for manipulation by a single operator rod.

In playing with his toy figures it is the particular desire of a child to impart to them life-like movements and expressions, and it is the object of this invention to provide a means en-

2

abling the life-like animation of any of his toy figures which have limbs movable relative the body, and further, to enable the manipulation of the toy to be easily carried out that the child himself may actuate its movements to follow precisely his own.

Referring to Figure 1, in which the operation of a doll as one embodiment of my invention is illustrated, I show the doll figure 1 provided with legs 2 which are movable relative the body portion on the pivot 3.

Extending between the feet of the doll 4 and the feet 5 of the person manipulating the doll are the longitudinally rigid operators 6 which may be wire, wood or the like and of any design of sufficient rigidity to transfer the movement of the operator's feet to the feet of the doll.

The connection between the operators 6 and the doll comprise the bands 7 encircling the doll's ankles and connected to the operators for movement relative thereto by any suitable means, for instance, by the clamps 8 of Figure 5 or the staple 9 of Figure 6. Preferably these bands comprise elastic bands which can be quickly slipped over the feet of the doll into position. Whether the actual connection between these bands 7 and the operators is a swivel connection, is immaterial, provided the bands themselves are of sufficient flexibility to afford a swivel movement of the operators relative the legs in the walking action.

The bands 10, which afford the means of securing the operators 6 to the feet of the person manipulating the doll, are similar to the bands 7, preferably simply elastic bands clamped or stapled to the operators, as shown in Figures 5 and 6. The staple connection is an extremely simple one enabling the bands to be readily changed if they should break.

Supporting the doll in an upright position during the walking action is the guide rod 11 formed with the work end 12 engaging under the arms 13 of the doll figure. This guide rod is a simple guide and support means that can be conveniently gripped by the person manipulating the figure, but it will be understood that a harness or any other suitable support means may be used as desired.

In Figure 2 the dog 14 is made to walk with opposite front and rear legs moving simultaneously. In this case the operators are formed with an elongated S-like extension 15 to provide the cross-over arrangement illustrated, and a

ring 16 encircling both operators at their point of cross-over and loose thereon holds the operators in relative position while permitting longitudinal sliding motion therebetween as the dog is walked. Again these operators are provided with bands 7 and 10 respectively, fitting the legs of the doll and the toes of the operator.

The dog's legs may simply be flexible or they may be rigid and pivoted to his body, although in the case of a four-footed animal the need of a guide or support may not be required. I show a leash 17 attached to the dog's collar 18, giving a more realistic effect and by making the leash longitudinally rigid giving further control to the dog's movements.

Figure 3 illustrates my invention applied to a horse, but in this case the operators 19 simply include spaced bands 7, and the legs at each side of the animal are operated simultaneously with the legs 20 and 21 at one side being shown advanced relative the other side.

Figure 4 illustrates an alternative form of cross-over operators 22, affording a scissor-like action, permitting relative longitudinal movement. In this case the operators are formed from relatively broad strips having extensions 23 bent laterally and twisted as at 24, the one being formed with a slot 25 to receive the other to maintain them in relative position while permitting longitudinal movement. Again these operators carry suitable means for affording a connection with the feet of the animal to be manipulated in the form of the bands 7.

Actually, while I have found these bands to be the simplest connecting means usable for all different types of figures, it will be understood that any other type of connection affording some relative movement between the feet being manipulated and the operators may be used, and where the toy figure is specifically constructed for use with our invention it may itself incorporate the means for affording a connection with the operators, such as snap fastener elements or the like.

While my invention is simple, nevertheless I am able to create a more life-like walking action than has heretofore been possible, and I am able to make my figures lead the manipulator with connection between his feet and the legs of the figure being almost inconspicuous, so that the control of the figure is not apparent.

Further, the construction and arrangement of my device enables the figure to be manipulated so simply that even the smallest walking child can impart walking action to his toys.

With the bands 7 and 10 elastic they automatically adjust to any size foot 5 and to any size of leg on the figure being animated. However, other equivalent connector means may be employed and may be connected to other than the foot or toe of the person manipulating the figure or to other than the ankle of the figure as illustrated without departing from the scope of my invention.

In certain toy figures the legs may be interconnected for simultaneous movement upon operation of the connector. The toy kangaroo of Figure 7 is of this type whereby the pivotal legs 26 are connected by a pin 27 to provide a simultaneous hopping movement in which case a single operator 28 is sufficient to enable the kangaroo to "lead" the person causing its manipulation, the operator 28 being swivelly connected to the pin 27 and to the person's foot by the elastic band 28. Other modifications of interlinked leg movements may of course also be employed as desired within

the concepts of the realistic toy figure animation I have envisaged.

What I claim as my invention is:

1. Means for manipulating a four-footed figure to be animated, comprising a pair of longitudinally rigid rod-like operators having cross-over extension portions, means confining said extension portions in cross-over relation while permitting relative longitudinal movement therebetween, connectors carried by said cross-over extensions whereby each operator extension is loosely connectable to opposing front and rear legs of the figure to be manipulated, and connectors carried by said operators removed from said cross-over extensions whereby said operators are loosely connectable with the toes of a person to manipulate said figure, and guide means adapted to engage and support the body of the figure to be manipulated, said first-mentioned connectors comprising horizontal elastic loops flexibly connected to said operators on opposite sides of the cross-over of said extension portions and adapted to encircle the legs of the figure, and said second-mentioned connectors comprise vertical elastic loops flexibly connected to said operators remote from the cross-over of said extension portions and adapted to encircle the manipulator's toes.

2. A device as claimed in claim 1 in which said means confining said extension portions in cross-over relation comprises a longitudinal slot in one of said operator extension portions to receive the extension portion of the other of said operators.

3. The combination with a walking figure to be animated, of means for imparting life-like animation to said figure from a point remote from said figure to cause it to walk in advance of a human manipulator in synchronism with and apparent anticipation of the movements of the feet of the manipulator, said means comprising a pair of longitudinally rigid rod-like operators having loop means at one end to engage the legs of the figure and provide a detachable swivel joint between the operators and figure with the operators extending rearwardly of the figure to a point remote therefrom, and loop means at the other end of said operators removed from said figure for connection with the legs of the manipulator as a detachable connection with said rod-like operators carrying through to the legs of said figure push and pull movements of the manipulator's legs whereby the legs of the figure are caused to duplicate movements of the manipulator's legs with the figure in advance of the manipulator, and guide means swingable in a vertical plane to adjust to the manipulator's height supporting said figure above said operators and extending to a manipulator's position removed from the figure.

4. The combination with a walking figure to be animated, of means for imparting life-like animation to said figure from a point remote from said figure to cause it to walk in advance of a human manipulator in synchronism with and apparent anticipation of the manipulator's movements, said means comprising a pair of longitudinally rigid rod-like operators, loop means at one end of said operators to engage the legs of the figure in a detachable swivel connection with the operators extending rearwardly from the figure close against the ground, said operators having at the ends thereof remote from the figure vertical elastic toe loops to engage over the toe of a shoe of the manipulator and securing said operators to the manipulator's shoe immediately adjacent the ground in a detachable swivel connection, and guide means swingable in a vertical plane to adjust to

2,624,155

5

the manipulator's height supporting said figure above said operators and extending to a manipulator's position removed from the figure.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
Re. 9,003	Goye -----	Dec. 23, 1879

Number
195,136
1,003,807
1,355,789
2,264,214
2,378,289
2,382,186

5

10 Number
777,135

6

Name	Date
King -----	Sept. 11, 1877
Rutz -----	Sept. 19, 1911
Williamson -----	Oct. 12, 1920
Lawrence -----	Nov. 25, 1941
Donovan -----	June 12, 1945
Valenti -----	Aug. 14, 1945

FOREIGN PATENTS

Country	Date
France -----	Nov. 17, 1934