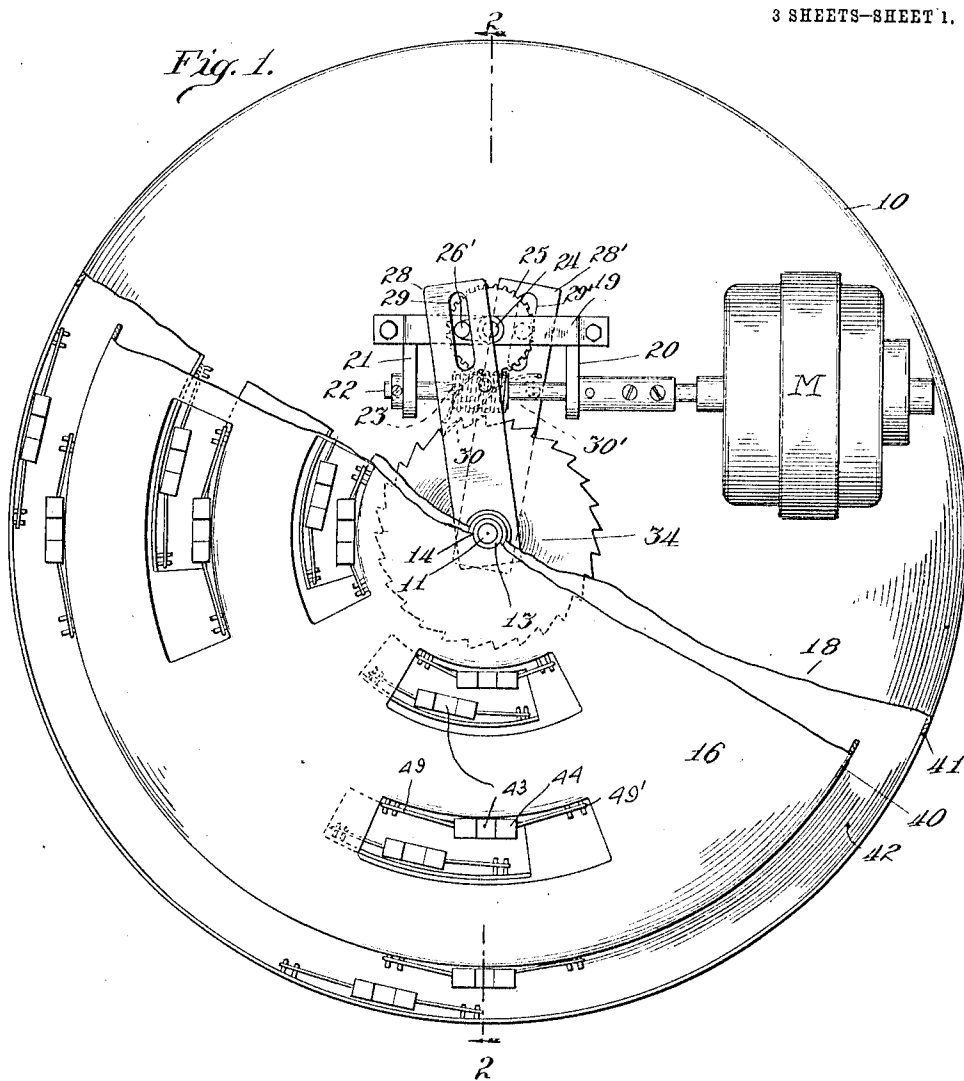
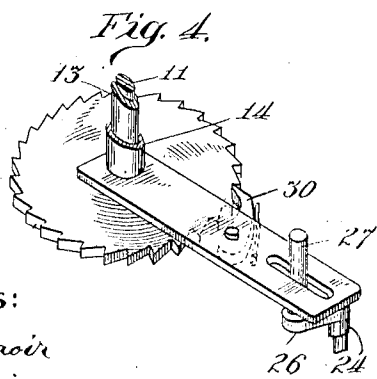


L. E. HARDIN.
 ADVERTISING AND AMUSEMENT DEVICE.
 APPLICATION FILED DEC. 27, 1912.

1,090,207.

Patented Mar. 17, 1914.

3 SHEETS—SHEET 1.



Witnesses:
Milton Lenoir
C. J. Schmidt

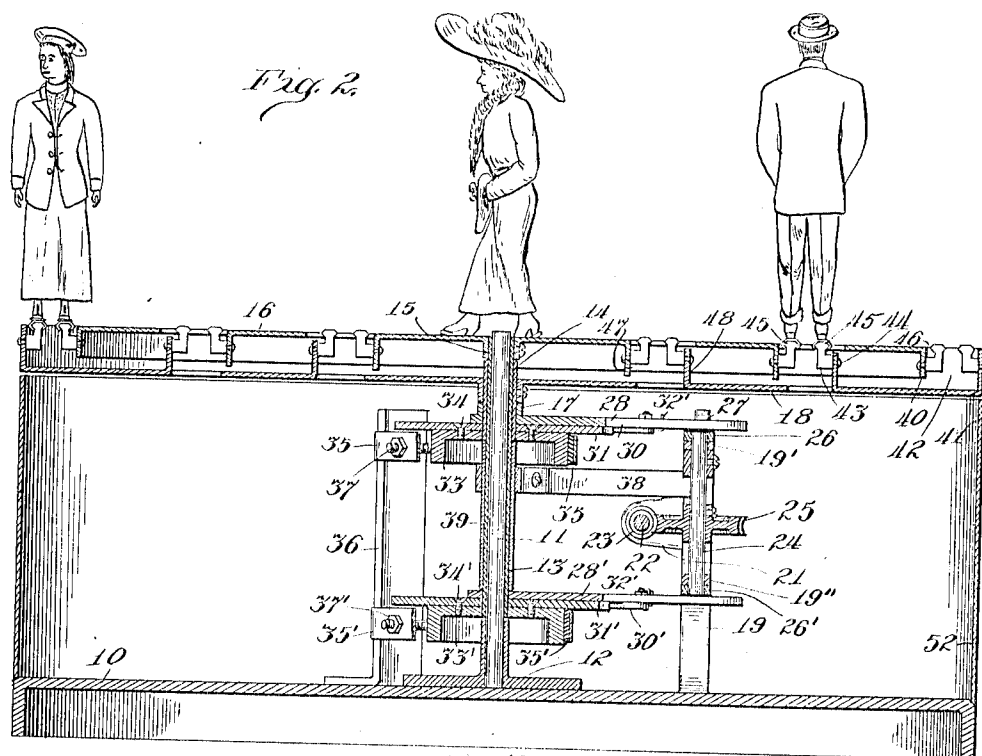
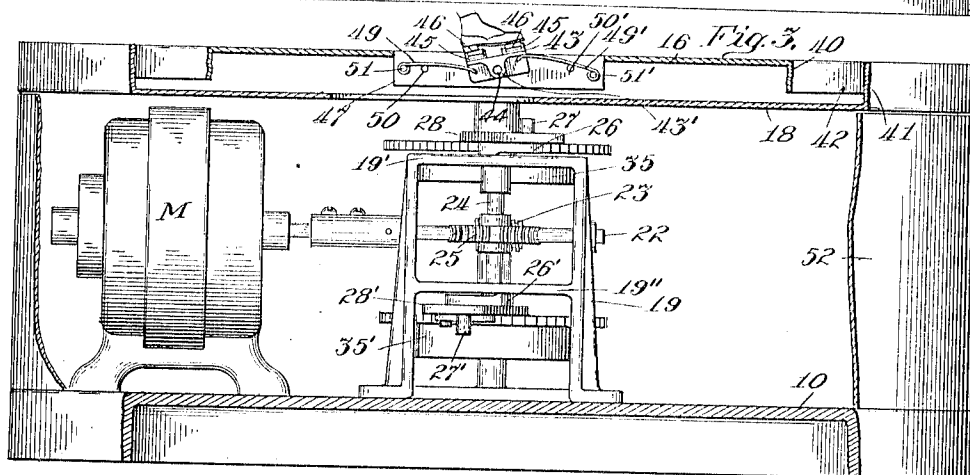
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3 SHEETS-SHEET 2.



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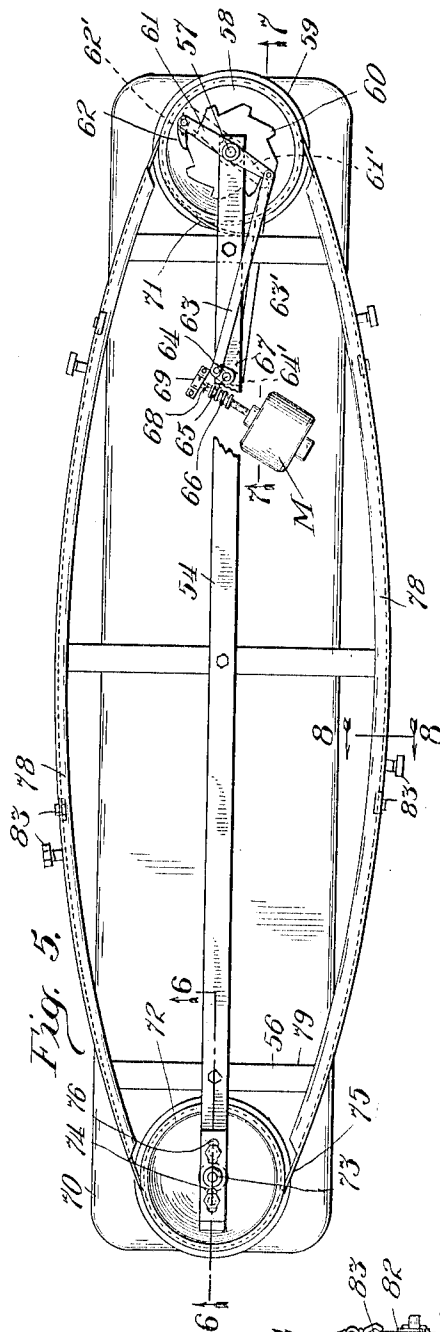
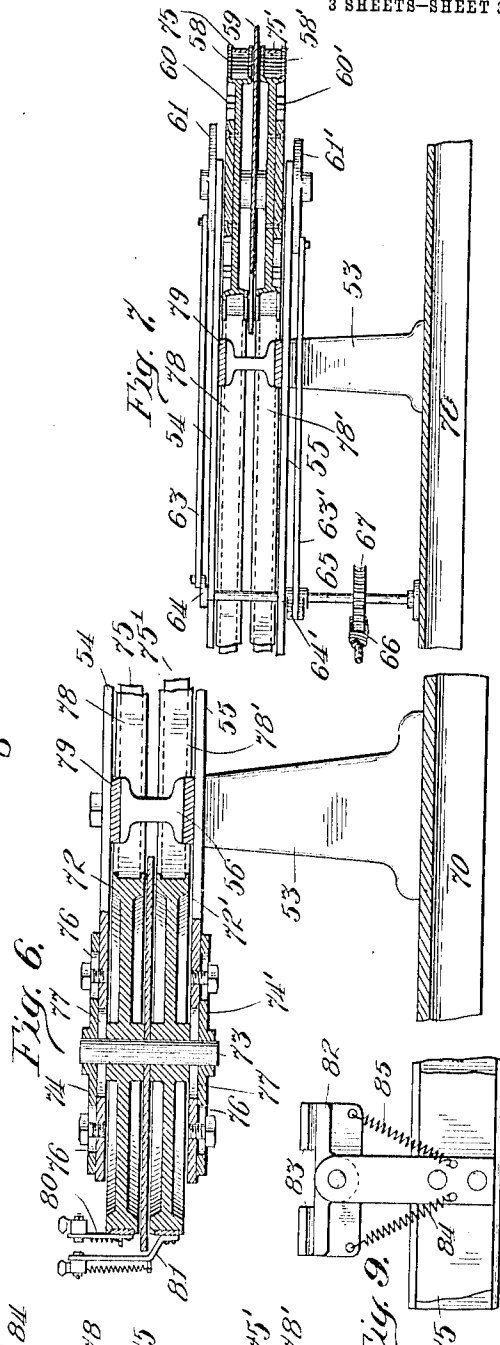
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3 SHEETS-SHEET 3.



Witnesses:
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Fig. 8.

Fig. 9.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Inventor:
Luther E. Hardin.
By *Officer, Jan. 1, 1914.*
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UNITED STATES PATENT OFFICE.

LUTHER E. HARDIN, OF CHICAGO, ILLINOIS.

ADVERTISING AND AMUSEMENT DEVICE.

1,090,207.

Specification of Letters Patent.

Patented Mar. 17, 1914.

Application filed December 27, 1912. Serial No. 738,850.

To all whom it may concern:

Be it known that I, LUTHER E. HARDIN, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Advertising and Amusement Devices, of which the following is a specification.

My invention relates to improved mechanism which may be used either for advertising and display purposes or for amusement purposes.

The invention concerns particularly mechanism in which propulsion members are alternately moved step by step so that figures representative of human beings or animals may have their limbs connected to the movable members to be moved thereby to imitate walking or running.

Among the important objects of the invention are to provide improved, simplified and more efficient driving mechanism for effecting the alternate step by step propulsion or advancement of suitable supporting members, and to provide such construction of driving mechanism that it may be used with but little alteration, if any, either for use in small toys, or for larger advertising devices, or for devices on which life-size figures are controlled; to provide such arrangement of supporting mechanism for the figures that such figures may be placed in various relative positions, either in single file or plural file or otherwise; to provide arrangement which will enable figures to be quickly and readily detachably or interchangeably applied to the supporting mechanism; to provide such arrangement that figures supported on the device may have greater flexibility of movement and will move more life-like; and in general to provide simple and efficient mechanism of the character referred to.

The various features of the invention are clearly illustrated on the accompanying drawings in which—

Figure 1 is a plan view of one form of structure embodying the various features of the invention; Fig. 2 is a sectional view taken on plane 2—2, Fig. 1; Fig. 3 is a side elevational view; Fig. 4 is a perspective view showing parts of the driving transmission mechanism; Fig. 5 is a plan view showing a modified arrangement; Fig. 6 is an enlarged sectional view taken on plane 6—6, Fig. 5; Fig. 7 is an

enlarged sectional view taken on plane 7—7 Fig. 5; Fig. 8 is an enlarged sectional view taken on plane 8—8, Fig. 5; and Fig. 9 is a side view of one of the figure supporting frames.

The construction and arrangement shown in Figs. 1 to 4 is more adaptable for toys or for smaller advertising devices. Describing the construction shown in these figures, a circular supporting base 10 supports from its center in any suitable manner a post 11 which may be in the form of a tube, as shown, supported in a socket member 12 secured to the base. Rotatable concentrically on this post are the inner and outer sleeves 13 and 14, the sleeve 13 having secured to its upper end the hub 15 from which extends the circular supporting disk member 16, while the sleeve 14 has secured to its upper end and below the hub 15 the hub 17 from which extends the circular supporting disk 18, these supporting disks being alternately rotated step by step by means of suitable driving mechanism. The driving mechanism shown is of a very simple and efficient construction. Mounted on the base 10 is a U-shaped bearing frame 19 whose side limbs support the inwardly extending plates 20 and 21 which form bearings at their ends for a driving shaft 22; this drive shaft supporting between the plates a worm 23. Journaled in a yoke 19' and intermediate cross wall 19'' of the bearing frame, is the vertical shaft 24 which mounts a worm wheel 25 with which the worm 23 meshes. The upper and lower ends of this worm wheel shaft have crank arms 26 and 26' respectively, from which extend crank pins 27 and 27', the crank arms extending preferably in opposite directions. Pivoted at its inner end to rotate freely about the outer sleeve 14 is a connecting rod or plate 28 whose outer end has the longitudinal slot 29 through which extends the crank pin 27. A similar connecting rod or plate 28' is pivoted at its inner end to rotate freely about the inner sleeve 13 and at its outer end has a longitudinal slot 29' for receiving the crank pin 27'. Pivoted to the under side of the upper plate 28 is a pawl 30, and a similar pawl 30' is pivoted to the under side of the lower plate 28', these pawls cooperating respectively with ratchet disks 31 and 31' which are secured to the outer and inner sleeves respectively. Suitable springs 32 and 32' press the respective

pawls toward the ratchet wheels. As the crank shaft rotates, the pawls will alternately engage with the teeth of the respective ratchet wheels to cause alternate rotary movement of the sleeves and supporting disks carried thereby, each sleeve and supporting disk being given step by step movement so that any figure, as for example a figure representing a human being, having its legs secured to the supporting disks will be carried bodily forwardly and the legs moved in imitation of walking. In order that each ratchet disk and the mechanism shifted therewith will remain in shifted position, brake mechanism is applied. As shown, a brake wheel 33 is secured to the lower end of the outer sleeve and the ratchet disk 31 is secured to this wheel as by means of screws 34. Likewise a brake wheel 33' is secured to the lower end of the inner sleeve and the ratchet disk 31' is secured to this wheel by screws 34'. The wheels 33 and 33' are engaged by brake straps 35 and 35' respectively, whose ends are secured to the supporting standard 36 on base 10. In order that the pressure of the brake straps against the wheels may be adjusted, adjusting screws 37 and 37' connect the respective brake strap ends between the brake wheels and the standard 36. In order to more rigidly hold the bearing frame 19 relative to the supporting post 11 and mechanism mounted thereon, a tie member 38 is shown connected with the frame and with a sleeve 39 surrounding the lower end of the inner driving sleeve 13. Any suitable driving means can of course be provided for driving the crank shaft. The crank shaft can terminate in a crank handle so that it can be operated manually or any form of motor can be used. A suitable form of motor M such as a spring motor or electric motor can be used, the motor being conveniently mounted on the base 10. Describing now the mechanism for supporting figures on the supporting disks, the upper disk 16 has the peripheral downwardly extending flange 40 and the lower disk 18 has the peripheral upwardly extending flange 41, the runway 42 being thus provided between the flanges 40 and 41 for the accommodation of supporting frames for figures to be propelled. As shown in Fig. 3, each supporting frame comprises a horizontal frame 43 from whose lower side extends a pivot lug 43' for receiving a pivot pin 44 extending from the flange 40 or 41. The plate 43 carries extensions 45 having enlarged heads for receiving clips 46 secured to the feet of the figures to be supported. The supporting frames are arranged in pairs on flanges 40 and 41, each pair to receive the feet of a figure to be supported and by means of the heads 45 and clips 46, the figures can be readily slipped on to the supporting frames or disconnected

ed therefrom. Provision is also made so that figures can be applied as desired at points between the peripheries of the supporting disks and the center of the disks so that figures may be mounted to travel in radial rows or in other relative positions. The upper plate is therefore shown as having sections stamped downwardly therefrom to form flange sections 47 and the lower disk has sections deflected upwardly therefrom to form supporting flanges 48. Sets of supporting frames are pivoted to adjacent flanges 47 and 48 for receiving figures. Supporting plates may of course be rigidly connected to the supporting flanges but they are preferably pivoted as shown and described so that the figures can better imitate walking, and in order to keep the figures in upright position, the frames are yieldingly held in horizontal position by suitable spring means. As shown in Fig. 3, springs 49 and 49' are secured at their outer ends to the outer ends of a supporting flange 47 on the inner supporting disk 16, the inner ends of the springs engaging below the supporting plate 42 at the ends thereof, pins 50 and 51 extending from the flange ends below the respective springs to keep the springs in proper pressure position. Below the plates secured to the intermediate flanges 48 on the lower disk 18, the springs are secured to the flanges and for the outside supporting plates the springs are secured to the flanges 40 and 41. The springs will tend to hold the figures in upright position but will yield to allow flexure of the legs, it being understood, of course, that the legs may be hinged at the knees or at the hips and that the figures may be jointed to imitate to a greater or less degree of perfection movements of a human or other figure in walking or running. The upper supporting disk 16 is unbroken except by the openings left after deflection of the flange parts 47 so that the supporting disks practically entirely inclose the upper part of the device. A shell or band 52 may extend upwardly from the base 10 so that the driving mechanism between the base and the supporting disks will be entirely inclosed and protected against dust and dirt and against tampering.

The construction described above and shown in Figs. 1 to 4 is particularly adaptable for toy purposes or for smaller advertising devices. By making the various parts of very thin sheet metal, a very light, simple and inexpensive toy could be made to operate as described and different kinds of figures could go with the toy to be interchangeably applied to the alternately advancing disks. For example, soldiers could be arranged in various relative positions on the supporting disks, or animals could be applied to the disks and caused to walk or run. The driving mechanism could be operated

manually as by means of a crank handle or a small spring or electric motor could be provided. Where the device is constructed for advertising purposes, it would of course be more substantial and the parts would be heavier and a stronger motor could be provided and the figures could be of proper design, depending upon the nature of the business or article of sale to be advertised. If built large enough, life-size figures could be accommodated and various wearing apparel displayed thereon and advertised.

A more desirable form for more extensive advertising purposes is shown in Figs. 5 to 9. Instead of circular paths for the figures an elliptical or oblong path is provided and instead of having the supporting members in the form of disks steel belts are provided for traveling about pulleys rotated by ratchet mechanism. Supported on standards 53 are upper and lower bars 54 and 55 spaced apart in parallel relation by blocks 56. Secured to the bars at one end thereof is a vertical shaft 57 on which upper and lower belt pulleys 58 and 58' are loosely mounted between the bars, a washer plate 59 being inserted between the pulleys. Secured to the upper side of the upper pulley 58 is a ratchet disk 60, and secured to the under side of the lower pulley is the ratchet disk 60'. Above and below the bars 54 and 55 respectively and pivoted on the ends of the shaft 57 are the upper and lower rock levers 61 and 61' whose ends pivot pawls 62 and 62' respectively for cooperating with ratchet disks 58 and 58'. The opposite ends of the levers pivot to the inner ends of the connecting rods 63 and 63' respectively whose outer ends are pivoted to crank sections 64 and 64' on crank shaft 65 which is journaled in the bars 54 and 55. The crank shaft carries a worm wheel 66 which meshes with the worm 67 on the drive shaft 68 journaled in bearings 69 mounted on the base 70 from which the supporting standards extend. A suitable motor M is mounted on the base 70 and connected with the worm shaft. As the crank shaft is driven, the connecting rods and levers will cause alternate cooperation of the pawls with the respective ratchet wheels and the driving pulleys 58 and 58' are alternately advanced. In order to lock the pulleys in their shifted positions, brake springs 71 may be provided and suitably supported from the bars 54 and 55. At the opposite ends of the bars 54 and 55 are provided the idler pulleys 72 and 72' mounted on a shaft 73. This shaft is journaled in bearing plates 74 and 74' secured to the bars 54 and 55 respectively. Passing about the upper drive pulley and idler pulley is a belt 75, and passing about the lower drive pulley and idler pulley is a belt 75'. In order that the belts may be kept in proper tension, the bearing plates 74 and 74'

are adjustable on the supporting bars, the plates having slotted screw holes 76 as indicated, and the bars 54 and 55 having elongated openings 77 for the shaft 73. In order to hold the belts in horizontal alinement, the peripheries of the driving and idler pulleys are preferably grooved as indicated, for intimately receiving the belts, and for the sections of the belts intermediate the pulleys, supporting guides 78 and 78' may be provided, these guides being also grooved, as indicated best in Fig. 7, to intimately receive the belts. These guides are shown as carried at the ends of cross bars 79 suitably supported from shaft 73 and bars 54 and 55. The guides may be straight or they may be bow-shaped, as shown, or they may be of irregular shape depending upon the path desired for the figures to travel over.

Figs. 8 and 9 show the manner of supporting figures from the belts. The upper belt has at desired intervals the extensions 80 secured thereto and at adjacent points the lower belt has the extensions 81 secured thereto. To the upper end of each extension a supporting frame 82 is pivoted and has the enlarged head extensions 83 for receiving clips on the figures so that the figures can be detachably applied to the sets of supporting frames. Springs 84 and 85 connecting between each extension and the opposite ends of the supporting frame thereon tend to hold the frame in horizontal position but will yield to allow rocking of the frame as the figures move.

I thus produce mechanism which can be used for amusement purposes or for advertising purposes and which is of simple and inexpensive construction.

I do not of course desire to be limited to the exact construction, arrangement and operation set forth as changes and modifications are no doubt possible which would still come within the scope of the appended claims which are the following:

1. In a device of the character described, the combination of bands, rotatable supporting mechanism for each band, a ratchet wheel associated with each supporting mechanism, a crank shaft having angularly displaced crank arms, a connecting rod extending from each crank arm, a pawl operated by each connecting rod and associated with one of said ratchet wheels, means for driving said crank shaft, whereby said supporting mechanism and bands engaged thereby are given alternate step by step movement, and figures having members connected with said bands to partake of the movements thereof.

2. In mechanism of the class described, the combination of belt pulleys, an endless band engaging about each pulley, a ratchet wheel associated with each pulley, pawl mechanism for each ratchet wheel, a crank

shaft having angularly displaced crank arms, a connecting rod connecting each crank arm with one of said pawl mechanisms whereby rotation of said shaft will effect alternate step by step rotation of said pulleys and corresponding movement of said bands, means for driving said crank shaft, and a figure having members connected with said bands to follow the step by step movement thereof.

3. In mechanism of the class described, the combination of belt pulleys, an endless band engaging about each pulley, a ratchet wheel associated with each pulley, pawl mechanism for each ratchet wheel, a crank shaft having angularly displaced crank arms, a connecting rod connecting each crank arm with one of said pawl mechanisms whereby rotation of said shaft will effect alternate step by step rotation of said pulleys and corresponding movement of said bands, a worm wheel on said shaft, a drive shaft having a worm engaging with said worm wheel, a driving source connected with said worm shaft, and a figure having members connected with said bands to follow the alternate step by step movements thereof.

4. In a device of the character described, the combination of bands, rotatable supporting mechanism for each band, a ratchet wheel associated with each supporting mechanism, a crank shaft having angularly displaced crank arms, a connecting rod extending from each crank arm, a pawl operated by each connecting rod and associated with one of said ratchet wheels, means for driving said crank shaft, whereby said supporting mechanism and bands engaged thereby are given alternate step by step movement, figures having members connected with said bands to partake of the movements thereof, and brake mechanism for braking said bands after each movement thereof.

5. In mechanism of the character described, the combination of two drive pulleys arranged one above the other, two idler pulleys arranged one above the other, an endless band passing about the upper pulleys and an endless band passing about the lower pulleys, said bands being in vertical alinement throughout their entire extent, a ratchet wheel associated with each of said driving pulleys, pawl mechanism associated with each ratchet wheel, a crank shaft having angularly displaced crank arms, a connecting rod connecting each crank arm with one of said pawl mechanisms whereby upon rotation of said crank shaft said bands will be given alternate step by step movement, and means for driving said crank shaft.

6. In mechanism of the character described, the combination of two drive pulleys arranged one above the other, two idler pul-

leys arranged one above the other, an endless band passing about the upper pulleys and an endless band passing about the lower pulleys, said bands being in vertical alinement throughout their entire extent, ratchet mechanism associated with each band, pawl mechanism for each ratchet mechanism, a crank shaft having angularly displaced crank arms operatively connected with said pawl mechanisms whereby upon rotation of said crank shaft said bands will be moved alternately step by step, and means for rotating said crank shaft.

7. In mechanism of the character described, the combination of two drive pulleys arranged one above the other, two idler pulleys arranged one above the other, an endless band passing about the upper pulleys and an endless band passing about the lower pulleys, said bands being in vertical alinement throughout their entire extent, ratchet mechanism associated with each band, pawl mechanism for each ratchet mechanism, a crank shaft having angularly displaced crank arms operatively connected with said pawl mechanisms whereby upon rotation of said crank shaft said bands will be moved alternately step by step, means for rotating said crank shaft, supports carried by said bands, a figure having limbs connected with said supports, and guide means adjacent the sections of said bands between the driving and idler pulleys for maintaining vertical alinement of said bands.

8. In mechanism of the class described, the combination of supporting members, parallel bands supported by said members, a shaft connected with each member, a ratchet disk on each shaft, a pawl for each ratchet disk, a supporting member for each pawl, a crank shaft having crank connections each connected with one of said pawl supporting members, and means for rotating said crank shaft.

9. In a device of the class described, the combination of two ratchet disks concentrically mounted, a crank shaft having crank sections, a pawl for each ratchet wheel, a connecting rod for connecting each pawl with a crank section, lever mechanism connected with each pawl and with one of said crank sections, and a rotatable member connected with each ratchet disk to be driven thereby.

10. In a device of the character described, the combination of a supporting base, a supporting post rising from said base, two superposed disks centered about said post and pivoted thereto, a ratchet wheel connected with each disk and pivoted on said post, a pawl associated with each ratchet wheel, and crank mechanism having crank sections connected with said pawls.

11. In a device of the character described, 130

the combination of parallel bands, rotatable
supporting members for said bands, means
for effecting alternate step by step advance-
ment of said bands, foot supporting plates
5 pivoted to said bands, a figure supported in
up-right position on said plates with its feet
secured thereto, and spring mechanism tend-
ing to hold said plates in horizontal position.

In witness whereof, I hereunto subscribe
my name this 23rd day of December, A. D. 10
1912.

LUTHER E. HARDIN.

Witnesses:

CHARLES J. SCHMIDT,
E. G. INGERSOLL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
