

No. 624,799.

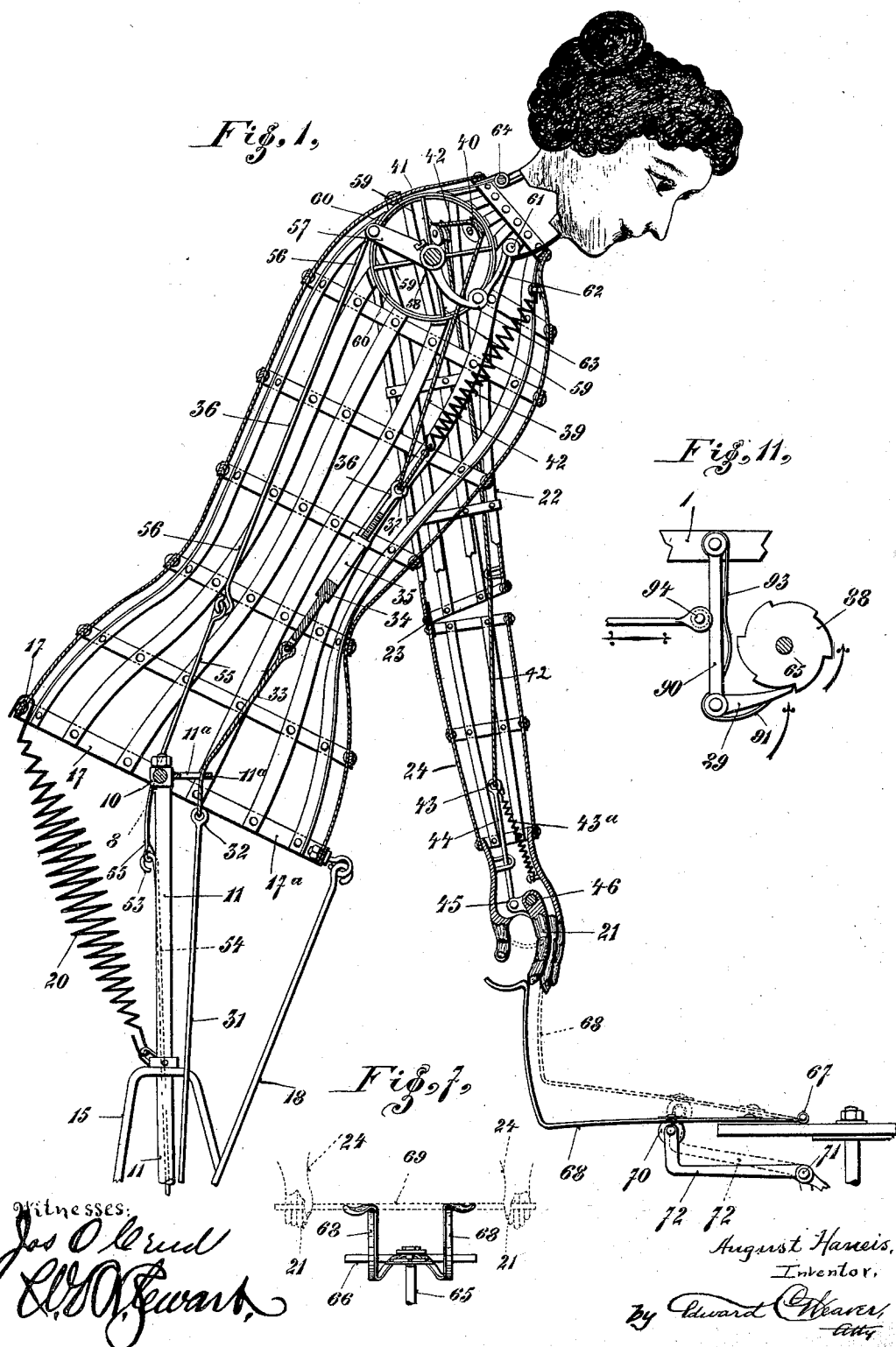
Patented May 9, 1899.

A. HAUEIS.
MECHANICAL FIGURE.

(Application filed May 16, 1898.)

(No Model.)

4 Sheets—Sheet 1.



No. 624,799.

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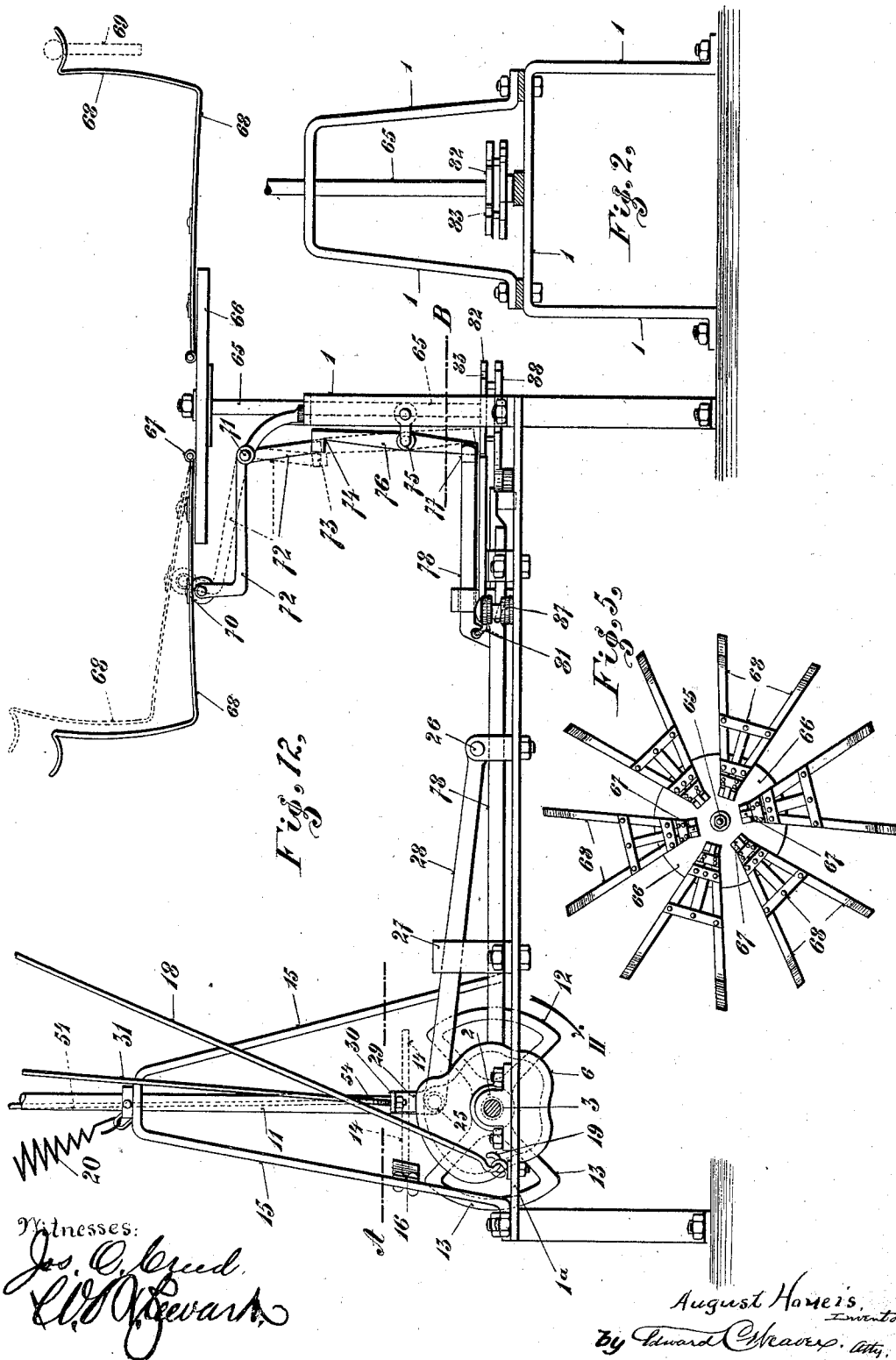
A. HAUEIS.

MECHANICAL FIGURE.

(Application filed May 16, 1898.)

(No Model.)

4 Sheets—Sheet 2.



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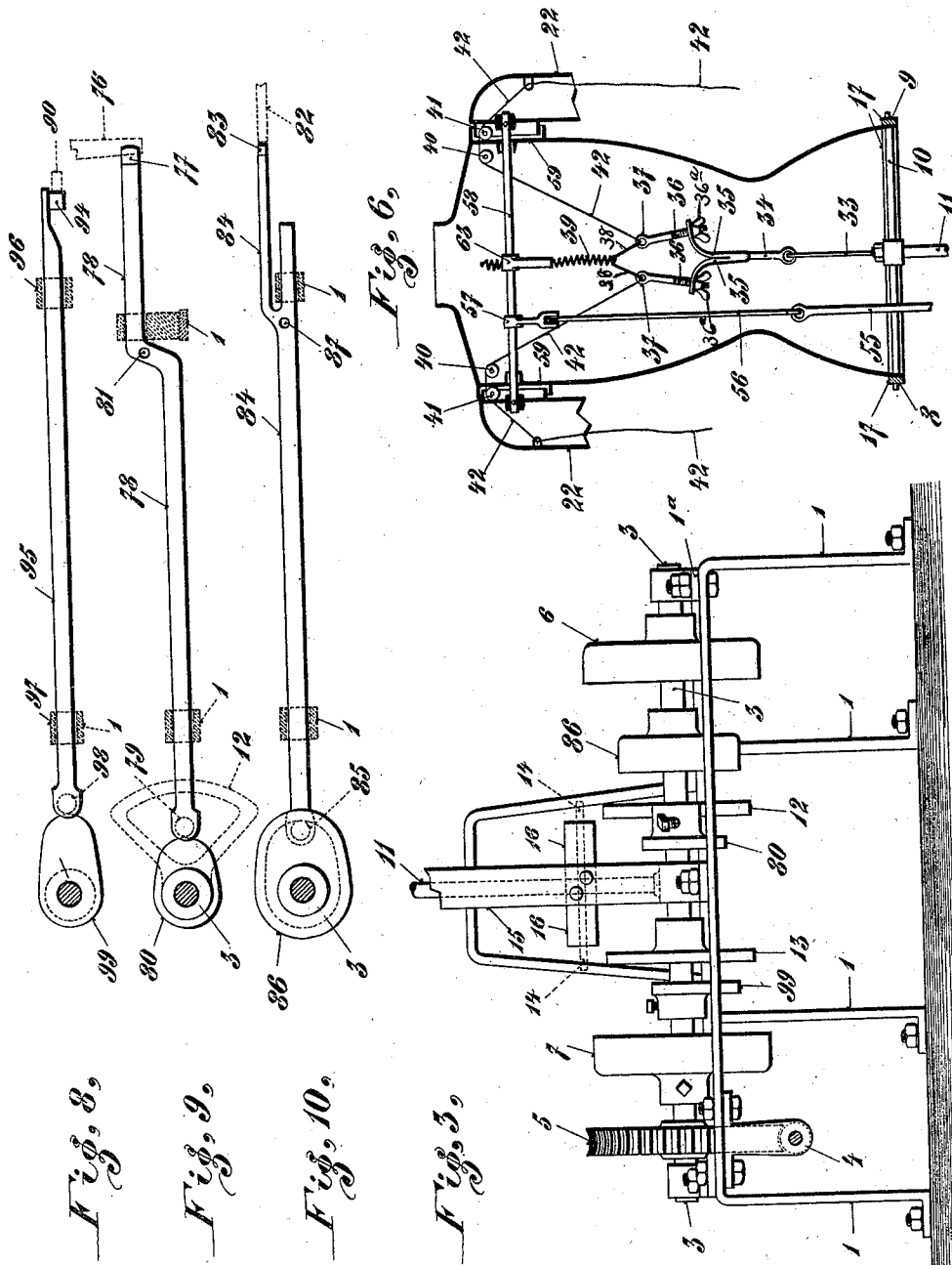
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A. HAUER.
MECHANICAL FIGURE.
(Application filed May 16, 1898.)

4 Sheets—Sheet 3.

(No Model.)



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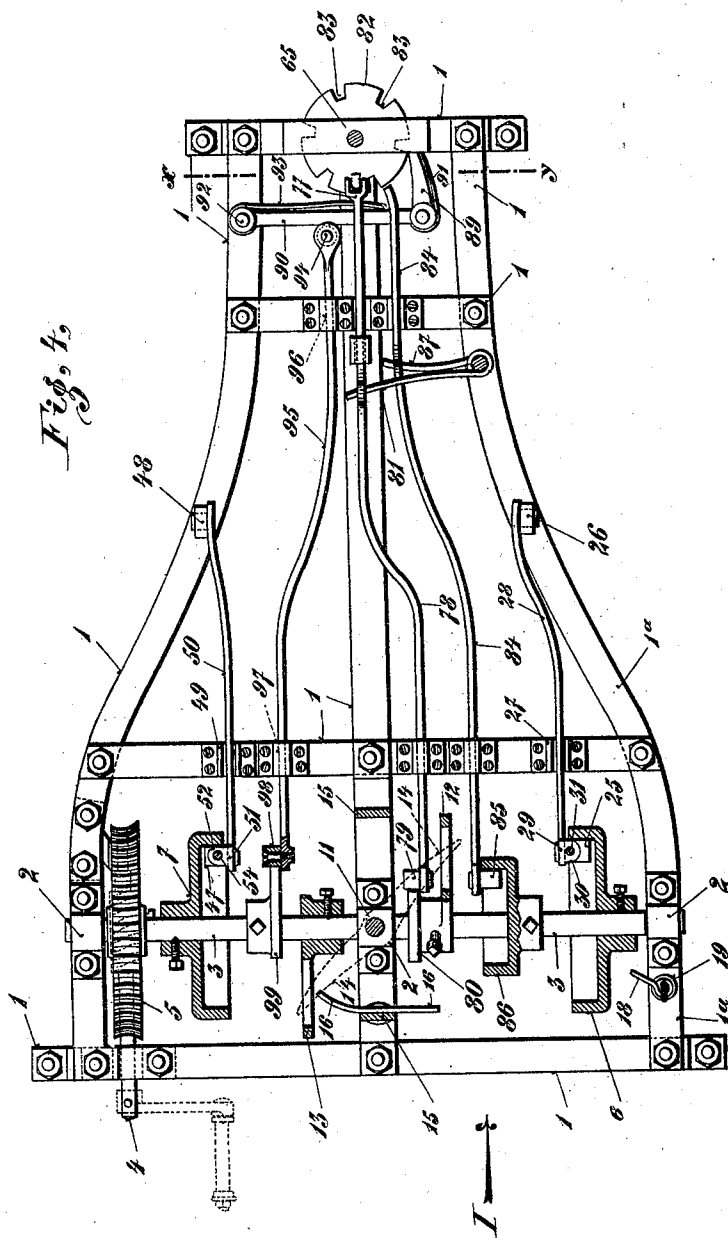
Patented May 9, 1899.

A. HAUEIS.
MECHANICAL FIGURE.

(Application filed May 16, 1898.)

(No Model.)

4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

AUGUST HAUEIS, OF ERFURT, GERMANY.

MECHANICAL FIGURE.

SPECIFICATION forming part of Letters Patent No. 624,799, dated May 9, 1899.

Application filed May 16, 1898. Serial No. 680,822. (No model.)

To all whom it may concern:

Be it known that I, AUGUST HAUEIS, of Erfurt, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Mechanical Figures; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional side elevation through the mechanism of the figure, which is about to take up an article to be exhibited. Fig. 2 is a partial section, on the line *xy* of Fig. 1, seen in the direction indicated by the arrow 1. Fig. 3 is a partial front elevation seen in the direction indicated by the arrow 1 in Fig. 4. Fig. 4 is a horizontal cross-section on the line A B of Fig. 12. Fig. 5 is a detail plan of the device supporting the different articles to be exhibited, said device being in the present case a vertical rotatably-supported table. Fig. 6 is a vertical section through the figure, through Fig. 1, with the head removed; and Figs. 7, 8, 9, 10, and 11 are detail views. Fig. 12 is a side elevation of the lower portion of the device.

My invention relates to a mechanical movable figure for advertising, exhibition, and similar purposes which stands in forwardly-inclined posture, takes up successively articles supported by a suitable device, straightens itself and turns partly around, raises its head and arm, displays the articles for a certain time, and then repeats all these movements in the reverse order and returns thus into its original posture, puts down the article it has been displaying, and takes up another which has been advanced in the meanwhile, and so on. The figure used for this purpose may represent a human form or it may take the form of an animal—as, for instance, a dog.

The accompanying drawings illustrate, by way of example, a construction according to the present invention, the mechanical figure shown being of human shape.

The construction of the apparatus is as follows:

The frame 1, supporting the figure and the rotatable table, supports in bearings 2 a main shaft 3, which is driven by worm-gearing 5 from a transverse shaft 4. The shaft 4 may be

operated by hand or from any desired source of power.

On the main shaft 3 there are mounted cams, of which the cam 6 serves to produce the movement of the lower arms and of the fore-finger and thumb of the figure and the cam 7 to produce the movement of the upper arms and of the head of the figure.

The figure consists of a metallic frame or body and is pivoted at 8 and 9 (see Fig. 6) on a cross-bar 10, secured to the upper end of the vertical spindle 11, mounted on the frame 1. In this way the figure is enabled to bend and to straighten itself again and to turn sidewise. The turning sidewise of the figure (to, say, an extent of two quarters of a revolution) takes place about the vertical spindle 11, which is operated by means of two slides 12 and 13, Fig. 4, mounted on the main shaft and arranged at an angle of one hundred and eighty degrees relatively to each other. The slides 12 and 13 operate alternately the ends of a lever 14, secured to the lower portion of the spindle 11, said lever striking in its end positions against an arm 16, secured to the bracket 15, whereby the extent of turning of the figure is limited. During this movement the straightening of the figure from the sloping or inclined position (shown in Fig. 1) is effected by means of the band 17 of the body being connected to an oblique rod 18, the other end of which is articulated at 19 to the frame. As the upper end of this rod 18 engages with the center of the front half 17^a of the band 17 and its lower end with the end 1^a of the frame, the rod 18 will describe, when the figure turns sidewise, an arc of a circle about the point 19 as a center, whereby the figure will be caused to come into an upright position. In order to make these movements of the figure quite uniform and to prevent jerks or vibration during the movement, there is provided a spring 20, secured at one end to the bracket 15 and the other end connected to the band 17, said spring controlling the whole movement of the figure. In the position of the figure shown in Fig. 1 the spring 20 is stretched.

The closing of the two fingers 21 of the figure and the raising of the lower arms 24, connected to the upper arms 22 by a hinge 23, is

effected, as already stated, by means of the cam 6 on the main shaft 3. This cam 6 operates a roller 25, rotatably supported on the free end of a lever 28, pivoted at 26 on the frame 1 and guided in a fork 27. The lever 28 is continued beyond the roller 25 and forms there an upwardly-directed angle-piece 29, (see Fig. 7,) the free side 30 of which latter carries an upwardly-extending rod 31. The upper end of the rod 31 is provided with an eye 32, to which is secured some flexible coupling, preferably a gut string 33. This string 33 is guided in a lug 11^a, secured to the spindle 11, and its upper end engages with a bifurcated intermediate link 34. (See Fig. 6.) The two upwardly-directed branches 35 of the link 34 carry at their free ends screw-bolts 36, which can be adjusted by means of thumb-nuts 36^a and the upper ends 37 of which are formed into lugs or eyes. To these eyes 37 is secured a flexible band or the like 38, connected to a spring 39, secured to the body of the figure. The spring 39, by means of the rod 31, cord 38, intermediate link 34, and the band 38, causes the roller 25 to be always held applied against the inner face of the cam 6. From the lugs 37 cords 42 are guided over guide-rollers 40 and 41, secured to the framework of the figure, to links 44, Fig. 1, provided with eyes 43, said links 44 engaging with the short arm 45 of the fingers 21, made in the form of angle-pieces and pivoted at 46. With each eye 43 engages a spring 43^a, said springs having a tendency to hold the fingers 21 always in the open position, as shown in Fig. 1.

The raising of the upper arm 22, and thereby the raising of the lower arm 24 with its fingers 21 closed, is effected during the turning and straightening of the finger by means of the cam 7. This cam engages a roller 47, mounted on the free end of a lever 50, pivoted at 48 on the frame 1 and guided in a fork 49. The free end of this lever 50 is formed, in the same way as the lever 28, into an upwardly-projecting angle-piece 51, the horizontal side 52 of which carries a rod 54, bent at the top to form an eye 53, Fig. 1. The rod 54 is connected to a rod 56 by means of a spring-band 55 or the like, guided over a cross-rod 10, the rod 56 being connected to a lever 57. The lever 57 is secured to a spindle 58, Figs. 1 and 6, passing through the figure in the direction of the width and rotatably supported in the shoulders and secured to the upper arms. The upper arms 22 are guided in the shoulder-sockets 60 of the figure and are raised when the rod 54 is depressed by the roller 47 and the cam 7. The return of the upper arms 22 into their lowered position, Fig. 1, takes place by reason of their weight, the roller 47 sliding along the curved face of the rotating cam 7. Together with the raising or lowering of the upper arms 22 takes place the raising or bending of the head. For this purpose the head is provided at 61 with a link 62, engaging with a lever 63, mounted on the trans-

verse spindle 58. When the latter is turned, the lever 63 raises or lowers the head pivoted on the hinge-pin 64, Figs. 1 and 6. The device for supporting the articles to be exhibited or to be taken up by the figure comprises a table 66, secured to vertical spindle 65 and provided with a suitable number of brackets 68, capable of being moved upward upon their hinges 67. On these brackets 68 are arranged the articles 69 to be exhibited, in such manner that when the corresponding bar is raised they are brought into the position indicated by dotted lines in Fig. 1, between the open thumb and fingers of the figure.

The raising of the corresponding bracket 68 or the corresponding article 69 at the proper moment is effected by means of the following device: The bracket 68 to be raised is engaged from underneath by a roller 70, mounted on the free upwardly-bent end of a bell-crank lever 72, pivoted at 71 on the frame 1. The other end 73 of this bell-crank lever 72 is arranged loosely between the branches of a fork 74, which form the upper free end of a lever 76, which is pivoted at 75 on the frame 1, so as to be adapted to swing vertically. The lower end of this lever 76 is situated in a fork 77 of a bar 78, horizontally movable on the frame 1. The other end of the bar 78 carries a roller 79, Fig. 4, which is operated by the cam 80 on the main shaft 3 and a spring 81. The spring 81 maintains the roller 79 or the bar 78 constantly applied against the cam 80, so that the lever 76, and thus the bell-crank lever 72, are brought at a suitable moment into the position indicated by dotted lines in Fig. 1, and thus raise the bracket 68, Figs. 1, 4, 8, and 9.

To cause the articles on the brackets 68 to be successively taken up by the figure, held up, and exhibited, the table 66 is made rotatable in such manner that it is stopped each time that a new bracket 68 is brought under the lowered hands of the figure. This stoppage of the table 66 is effected by means of a ratchet-wheel 82, secured to the vertical rotating spindle 65 of the table 66, said wheel having as many intervals 83 between its teeth as there are brackets on the table. With these ratchet-wheel intervals 83 engages the free end of a rod 84, which is arranged on the frame 1 so as to be horizontally movable, Figs. 1, 2, 4, and 10. The other end of this rod 84 carries a roller 85, which is acted upon by a cam 86, secured to the main shaft 3 and always held in contact with the cam by means of a spring 87, acting on the rod 84. If the table 66 is to be turned, the rod 84 leaves the corresponding tooth-interval 83 and springs into the next following recess.

The turning of the table 66 at the proper moment is effected by means of a ratchet-wheel 88, secured to its spindle 65, said wheel 88 being arranged immediately under the ratchet-wheel 82 and having as many teeth as there are tooth-intervals in the ratchet-wheel

82 or, which is the same thing, brackets on the table. The movement of the wheel 88 is caused by a pawl 89, pivoted to the free end of a lever 90 and held in engagement with the wheel 88 by means of a spring 91, secured to said lever 90. The lever 90 is pivoted to the frame 1 at 92 and is held constantly applied by means of a spring 93 against a roller 94, which is mounted on the free end of a rod 95. This rod 95 is supported and guided in the frame 1 at 96 and 97 in such manner as to be longitudinally movable and has at its other end a roller 98, operated by the cam 99 on the main shaft 3, Figs. 4, 8, and 11. As the spring 93, acting on the lever 90, constantly presses the rod 95, and consequently the roller 98, against the cam 99, the turning of this latter will cause the rod 95, and consequently the lever 90, to move in such way that the pawl 89 moves the wheel 88 at the proper moment to the extent of one tooth, whereby the table 66 is moved so that another bracket comes under the hands of the figure.

The whole working of the figure described is as follows: If the figure and its mechanism are in the position shown in full lines and the main shaft 3 is turned by means of the gear 4 and 5 in the direction indicated by the arrow II, Fig. 12, the following movement will occur: Owing, first, to the projecting portion of the cam 80 acting on the rod 76 through the bar 78, the bracket 68 will be raised, Fig. 1, dotted lines, and thus the article 69, placed on said bracket, will be brought between the open fingers of the figure. Meanwhile the cam 6 has come into the position in which its downwardly-inclined portion becomes operative, whereby the roller 25 moves downward. This roller draws down the rod 31, which by means of the link 33, intermediate member 34, and cord 42, with links 44, closes the fingers 21 of the figure. During the time that the bracket 68 again returns into its original position the movement of the rod 31 causes the lower arms 24, pivoted about the pins 23, to be raised, whereupon its engagement with the descending portion of the cam 7 causes the rod 54 to be drawn down, said rod causing the shaft 58 to turn to a certain extent by means of the spring-band 55, rod 56, and lever 57, and consequently raises the head and the upper arms 22, with the lower arms already raised and the hands grasping the article to be exhibited. At the same time the part 13 has operated the lever 14, and thus caused the figure to straighten itself by means of the spring 20 and rod 18 and to turn partly around, in which position the figure remains until the downwardly-inclined part of the cams 6 and 7 come into operation and the part 12, which in the meantime has moved upward, comes into engagement, whereupon the figure returns into its original position, (shown in Fig. 1,) the arms returning into the position shown, the fingers 21 opening and letting the article 69 drop onto its bracket 68. As now another article is to be seized by the hand

of the figure, held up, and exhibited, the table 66 must turn so as to bring the next bracket into position. As, however, the hands are in the way, the lower arms 24 are again slightly raised in the manner described until the next bracket and article come under the hands of the figure. This movement corresponds to the natural movement of a person moving articles from one place to another. During the rotation of the table 66 the rod 84 and the ratchet-wheel 82 and the ratchet-wheel 88, driven by the rod 95, with the lever 90 and pawl 89, become operative. When the next bracket 68, with its article 69, has arrived into its new position, the lower arms are again lowered and the whole operation is repeated.

The device for supporting different articles to be exhibited may have the shape of a table, wheel, box, or any other suitable device, and any desired number of articles may be placed on it or attached to it.

The figure may have a comical dress or one to correspond with the articles shown. It may represent a shop-girl, a circus-girl, a bar-maid, or any other character. If the figure is in the form of an animal, it may have a natural coat or be clothed in any desired manner, or the figures may have human forms with animals' heads, or vice versa.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. An apparatus for advertising and the like, comprising a figure mounted to normally stand in a slightly-inclined position for rotary and pivotal movement, and having a jointed member, means for delivering an article to said jointed member and means for causing the said figure to take up such article, straighten itself and at the same time raise its head and jointed member and turn partially around upon its pivot and to hold up the said article and means for momentarily retaining the figure in its raised position and means for intermittently stopping the support for the article as set forth.

2. An apparatus for advertising and the like, comprising a figure mounted for rotation and for pivotal movement in the arc of a circle, a jointed arm to said figure, a cam and connections with a driven shaft for causing the movement of the upper member of said jointed arm, and a cam and connections with the driven shaft for giving the lower member of said arm its movement, a rotatable support for the articles, and means for intermittently stopping said support substantially as described.

3. An apparatus for advertising and the like, comprising a figure mounted for rotation and for pivotal movement in the arc of a circle, a jointed arm to said figure, a cam and connections with a driven shaft for causing the movement of the upper member of said jointed arm, and a cam and connections with

the driven shaft for giving the lower member of said arm its movements and an automatically-elevated device for delivering an article to said lower member, substantially as described.

4. In an apparatus of the character described, the combination with a figure mounted for rotation and to be raised and lowered, of a rotatable device for supporting the articles to be delivered to the figure, and means for intermittently stopping said device, as and for the purpose specified.

5. In an apparatus of the character described, the combination with a figure normally standing in a stooping posture and mounted for rotation and to be raised and lowered, of a rotatable table provided with brackets, means for moving said table, and means for automatically elevating the brackets to deliver an article to the figure as set forth.

6. In an apparatus of the character described, the combination with a figure normally standing in a stooping posture and mounted for rotation and to be raised and lowered, of a rotatable table provided with brackets, means for moving said table, and means for automatically elevating the brackets to deliver an article to the figure and means for intermittently stopping said table at predetermined times, as set forth.

7. In an apparatus of the character described, a figure mounted for bodily movement into and from a stooping position and for rotation about a vertical spindle, combined with a lever mounted on a transverse pivot supported in the upper part of said figure, and means between said lever and the pivoted head of the figure as set forth.

8. In an apparatus of the character described the combination with a vertical spindle and a figure mounted for rotation, of a

band carried by said figure, a rod connected therewith, with one end pivotally attached to the frame, and means for giving said band a movement in the arc of a circle about the attachment of the rod to the frame as a center, as set forth.

9. In an apparatus of the character described, the combination with a figure having a band, of a spindle on which said figure is mounted, means for operating the spindle, and an obliquely-disposed rod connected to said band and pivotally attached to the frame as set forth.

10. In an apparatus of the character described, the combination with a figure having a band, of a spindle on which said figure is mounted, means for operating the spindle, and an obliquely-disposed rod connected to said band and pivotally attached to the frame and means connected to said band for controlling the movements of the figure as set forth.

11. In an apparatus of the character described, the combination with a figure mounted for rotation and to be raised and lowered, of a rotatable table and brackets pivotally mounted thereon and means for automatically elevating the brackets to deliver an article to the figure, as set forth.

12. In an apparatus of the character described, a rotatable device, radially-disposed brackets pivoted thereon means for automatically elevating the outer ends of said brackets and means for intermittently stopping said device, as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST HAUEIS.

Witnesses:

RUDOLPH FRICKE,
B. H. WARNER, Jr.