No. 631,306. Patented Aug. 22, 1899.

C. M. HOLLINGSWORTH.

MECHANISM FOR PRODUCING COMPOSITE ROTARY MOTION.

(Application filed Oct. 13, 1898.)

(No Model.)

Fig. 1.

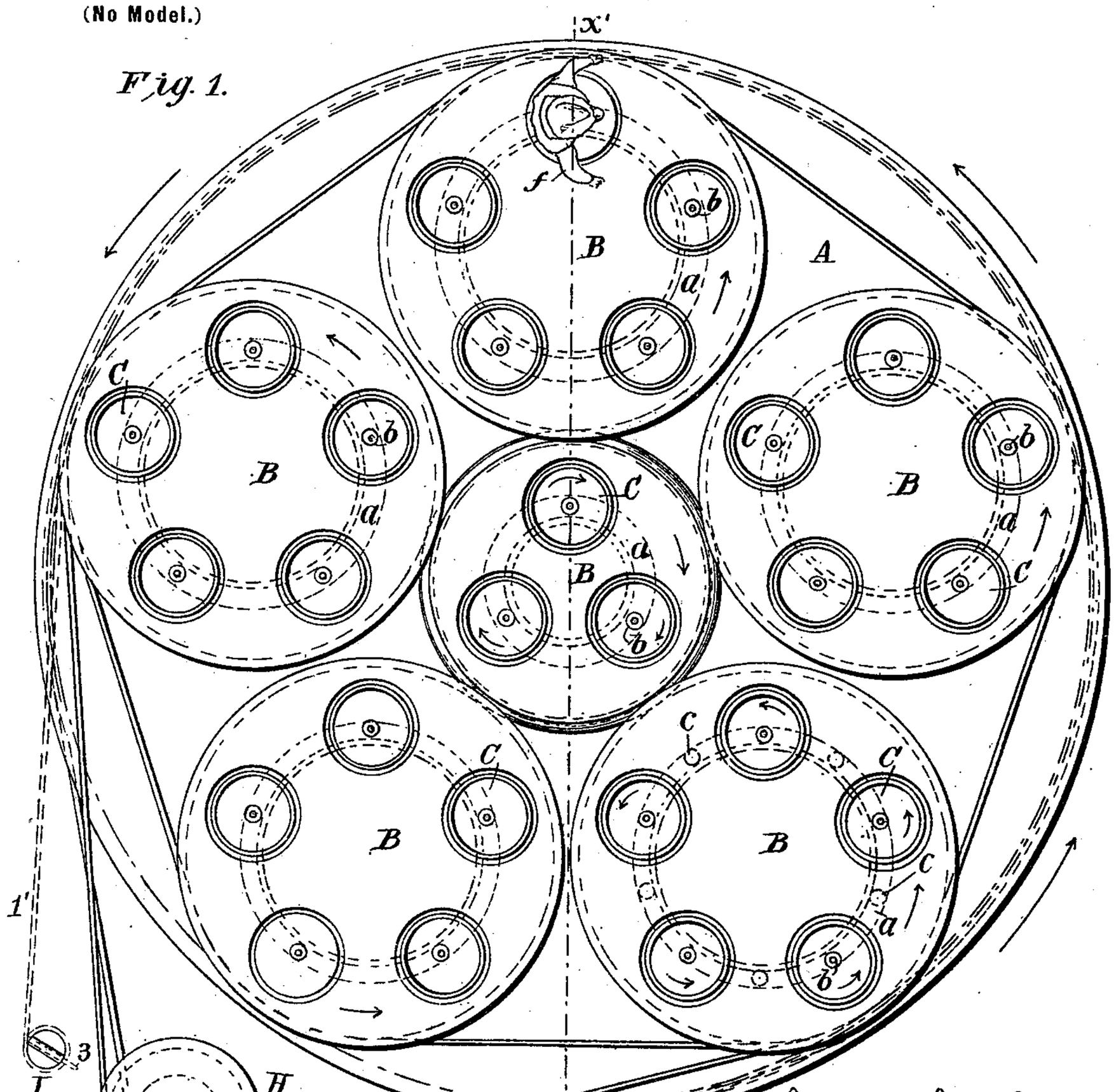
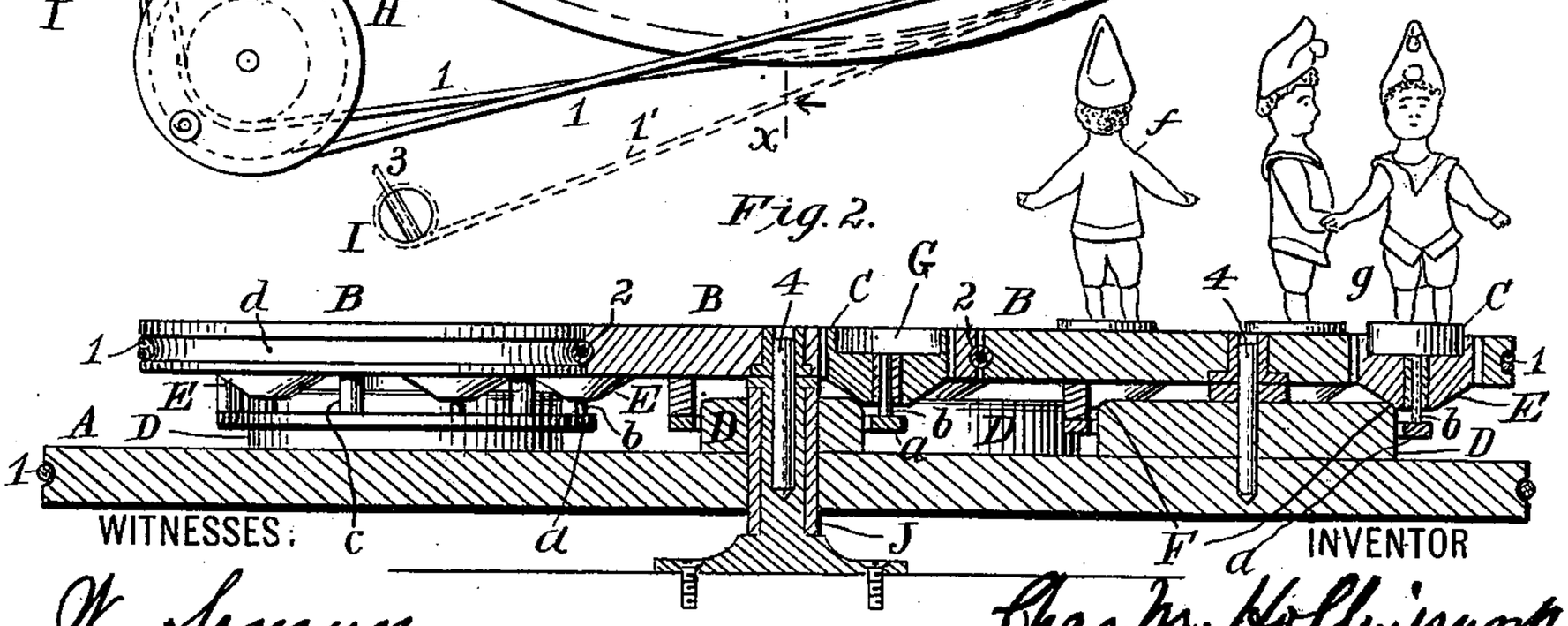


Fig. 2.



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MECHANISM FOR PRODUCING COMPOSITE ROTARY MOTION.

SPECIFICATION forming part of Letters Patent No. 631,306, dated August 22, 1899.

Application filed October 13, 1898. Serial No. 693,464. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HOLLINGSWORTH, a citizen of the United States, and a resident of Newburg, in the county of Orange, in the State of New York, have invented certain new and useful Improvements in Mechanisms for Producing Rotary Composite Movements, of which the following is a specification.

My invention relates to structures and mechanisms by which a large troup or assemblage of figures of human form or figures representing animals or other objects may be caused to execute composite or involved rotary movements for spectacular effects or by which human beings themselves may be carried around in composite rotation, thus not only presenting a novel spectacle to onlookers, but also exciting novel and pleasing sensations in those that are thus carried.

It relates, further, to the arrangement relative to each other of the various coöperating parts both as a means of producing the composite rotary movement and as giving the most effective arrangement of the figures or other objects to be carried.

I am aware that mechanisms have been constructed by which artificial figures of human form are given a whirling or waltzing movement; but such devices have hitherto been confined to the production of comparatively simple movements by a small number of figures, and consequently have afforded but very limited spectacular effects, which tend to become quickly tiresome from lack of variety. By my invention such effects are greatly enhanced and varied, not only by using a great number of figures, but by arranging them in several sets on a general platform, which is itself made to rotate. This both adds to the movement and constantly brings directly before the spectator in succession new sets of the figures, which may be made to greatly differ from each other in character and rate of rotation. Thus the spectacle is constantly changing, as in a varied procession, and monotony of effect is avoided. It will readily be seen that where an assemblage of artificial figures is given mechanical movement which for each individual figure is primarily nearly uniform secondary and more general movements in which the relative positions of the figures are constantly changing before the eye must play a very important part in securing a pleasing and varying effect, and this end I endeavor to attain in the fullest manner by the means herein described.

The moving mechanism shown in the drawings is adapted for equipment with doll-figures for use as a parlor toy, or for equipment with large figures that are essentially artistic, or figures that represent varied types of character or caricature, in which case the invention may be used as a prominent attraction in a museum, show, or other place of amusement.

Referring to the drawings, Figure 1 shows a plan, and Fig. 2 a section of the same on the line $x\,x'$.

Similar letters and figures refer so far as possible to similar parts in the different drawings.

In Fig. 1, A is the main platform, which revolves about a central axis and supports and carries around with it a number of secondary platforms B B B, &c. These secondary platforms, in addition to being carried around by the main platform, have also a rotation of their own, shown in the figure as produced by belts 11, which run in grooves cut in their periphery. The number of these secondary platforms may be any whatever. I have shown five outer ones and one smaller secondary platform in the center which turns by friction of its circumference on the circumferences of the larger secondary platforms. In case the number of secondary platforms was chosen as seven they would all be about the same size. The secondary platforms are provided with apertures, and into these apertures are set pedestals C C C, &c., which support figures and give them also a rotary motion of their own around the axis *b*. Fixed to the main platform A and beneath and supporting the secondary platforms B B, &c., are circular base-pieces having beveled upper edges against which the pedestals carrying the figures rest, their edges being correspondingly beveled. H shows one means for rotating both the main and the secondary platforms.

In Fig. 2 we have a section of the apparatus on the line $x\,x'$ of Fig. 1. In this figure, A is the main platform, turned by the belt 1. B B are the secondary platforms, having

grooves *d* on the circumference for receiving the turning-belt 1 1. D D D are the fixed circular base-pieces beveled at their upper edges, as shown at F. C C are the pedestals for holding the revolving figures *f*, having beveled edges E E. Beneath the secondary platforms B and attached thereto by posts *c* is a ring *a a*, which serves to support the axes *b b*, about which the figures *f* rotate. 4 4 are the axes of rotation of the secondary platforms B B. 2 2 shows one method of rotating the central secondary platform by friction of rubber tube filling the groove on the circumference of the secondary platforms. At G, I have shown a means for mounting the figures on the rotating pedestals. I prepare some plastic material, into which I set the figures when the material is soft, and when it has hardened I reduce it to size and press it firmly into the circular hole made into top portion of the pedestals C C, or the figures can be originally cast with the bases attached. The figures being thus removable, I am able to change them at will and give an endless variety to the effect produced by the whole apparatus. A pair of figures—say two people waltzing together—can be mounted by the same means on the same pedestal. J is the axis about which the whole composite mechanism revolves.

The operation of the mechanism will now be easily understood. When the double driving-sheave H is rotated, the belt working in the grooves of the main and secondary platforms will cause them to revolve, the direction being shown by the arrows in Fig. 1. As the secondary platforms revolve the pedestals C, carrying the figures *f*, will revolve by friction of the beveled edges E E against the beveled edges F of the fixed base-pieces D.

By varying the diameter of the fixed base-pieces D, around which the rotary pedestals travel, so as to make the distance from the center of the pedestal to the point of its contact with the base-piece greater or less, the speed of rotation of the figures can be varied for the different sets. It can also be done by varying the radial distances of the pedestals from the center of the secondary bases. Different individuals of the same set may thus be made to rotate at different rates. By detaching from the driving-sheave the belt which rotates the secondary platforms B B and fastening it to the stationary uprights I I by the slots 3 3 or other means the figures on the rotating pedestals are given a motion different from that when the belt revolves on the driving-sheave H. With the two belts shown operated by a two-groove sheave on the same axis, the part operating the secondary platforms being larger than the part operating the main platform, the figures on the outer parts of the secondary platform are given a rapid forward motion before the spectator, the tangential motion of the secondary platform being added to that of the main platform. By taking the belt that works on the secondary platforms off the driving-sheave and attaching its ends to the posts I I by the pins 3 3 it becomes a fixed belt, in which the secondary platforms turn or roll around when the main platform is turned. This gives a similar general effect, but with the difference that the figures when next the spectator are held approximately stationary as regards forward movement, the whirling movement of all the figures being the same as before, as also the progressive carrying around of the secondary platforms.

The combinations of parts shown in Fig. 2 could be used for a merry-go-round, but would be modified as follows: The small secondary platform in the center would be omitted, and the rotary pedestals C C would be replaced by seats fixed on the secondary platforms, and the ring *a* under the secondary platform, which supports the journals of the rotary pedestals, would be dispensed with.

Having thus fully described and illustrated my invention, what I claim is—

1. In mechanisms for imparting composite rotary motion to artistic figures or other objects, a main rotary platform, secondary rotary platforms mounted on the main platform, removable rotary pedestals having beveled lower ends arranged on journals carried by the secondary platforms, fixed bases for the secondary platforms having beveled upper edges, rings fastened to the secondary platforms and supporting the journals of the rotary pedestals, and means for simultaneously rotating the main platform, the secondary platforms and the pedestals.

2. In mechanisms for imparting composite rotary motion to artistic figures or other objects, the combination of a main rotary platform, a series of secondary rotary platforms mounted on the main platform, rotary pedestals carried by the rotary platforms, and means for rotating the main platform, the secondary platforms and the rotary pedestals.

3. In mechanisms for imparting composite rotary motion to artistic figures or other objects, a series of circular platforms whose axes are arranged on a circle, a common belt for giving rotary motion to said platforms, in combination with a circular central platform having its periphery in rotary frictional contact with the peripheries of the surrounding platforms, substantially as set forth.

4. In mechanisms for imparting composite rotary motion to artistic figures or other objects, the combination of a base, a platform supported upon said base, circular apertures adapted to receive rotary pedestals in said platform, a circular ring depending from the platform, carrying journals in said circular apertures, and pedestals resting upon the base and rotating about the said journals.

5. In mechanism for giving composite rotary motion to artistic figures or other objects, the combination of a circular base having a beveled upper edge, a rotary platform having circular apertures adapted to receive rotary

pedestals, rotary pedestals mounted within said apertures and having beveled lower ends resting against the beveled edge of the said base, and means for revolving the rotary platforms.

6. In mechanisms for producing composite motion, a rotary pedestal for carrying artistic figures or other objects having its under side beveled, and its upper surface provided with a depression, adapted to receive and securely hold the said figures.

7. In mechanisms for giving rotary motion to artistic figures or other objects, the combination of a rotary pedestal beveled at its lower side and having a depression on its upper side, and an artistic figure provided with a base or support adapted to fit removably in the recess of the pedestal.

8. In a platform for imparting composite rotary motion to artistic figures or other objects, the combination of a series of apertures adapted to receive removable rotary pedestals, and a depending ring, having journals attached thereto and central in the said apertures, said journals being adapted to serve as the axis of a series of rotary pedestals.

9. In mechanisms for giving composite rotary motion to artistic figures or other objects, the combination of a main rotary platform, a series of secondary rotary platforms mounted on separate axes on the main platform, both the main and secondary platforms having belt-grooves in their peripheries, a belt for the main platform, a separate belt for the secondary platforms and a multiple-groove actuating-sheave adapted for imparting a more rapid rate of motion to the belt of the secondary platforms than that given to the belt of the main platform, substantially as described.

Signed at New York, in the county of New York and State of New York, this 7th day of October, A. D. 1898.

CHARLES M. HOLLINGSWORTH.

Witnesses:

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