T. M. VAUGHAN.

MECHANICAL TOY.

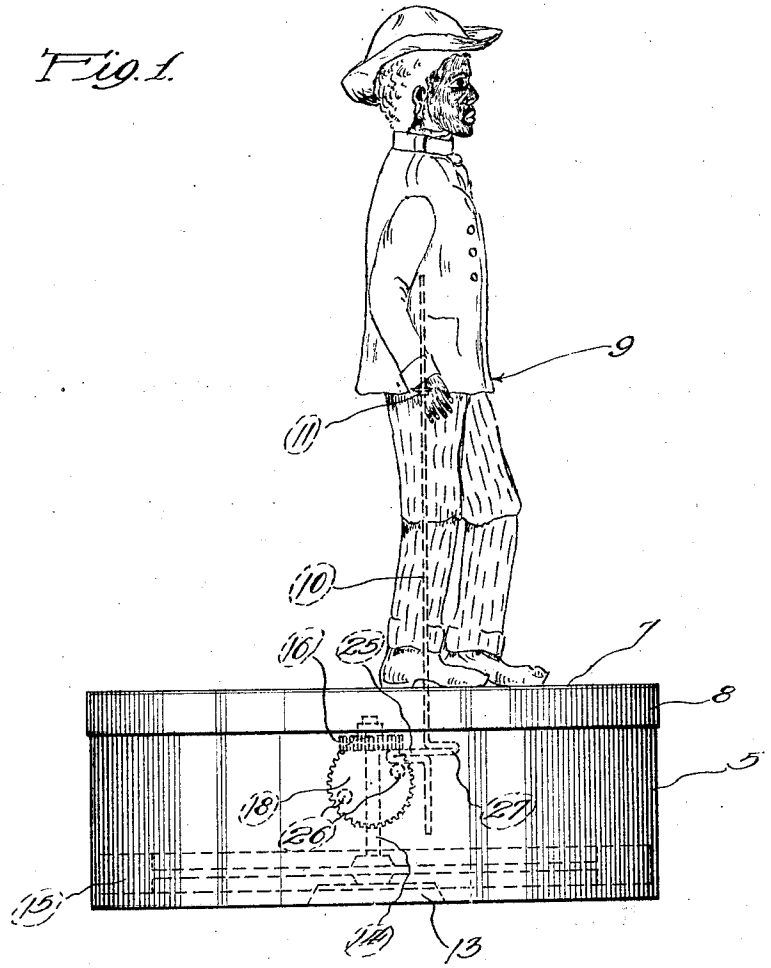
APPLICATION FILED MAR. 21, 1921.

1,410,429.

Patented Mar. 21, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

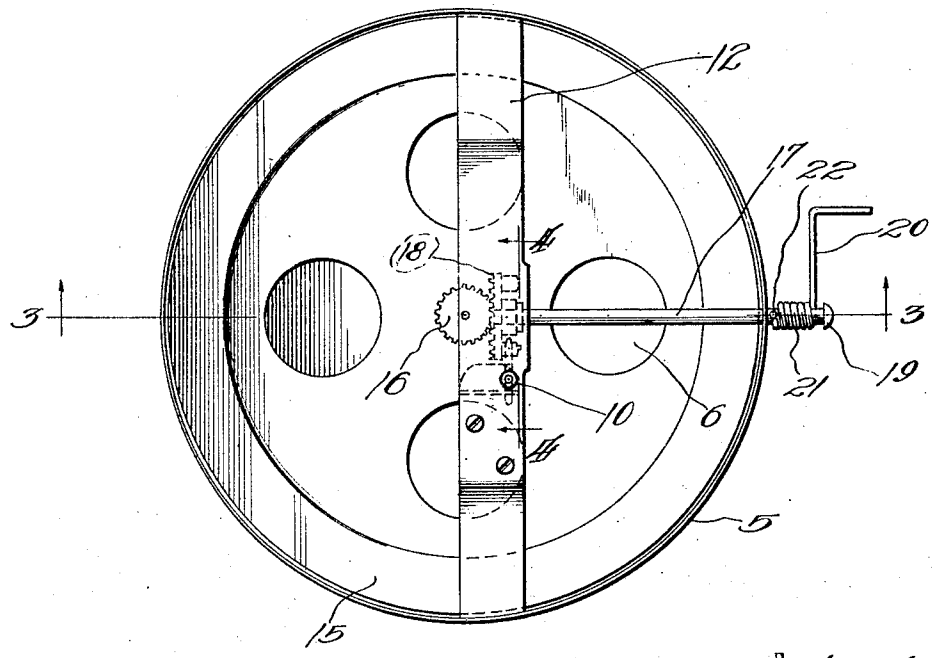


Fig. 3.

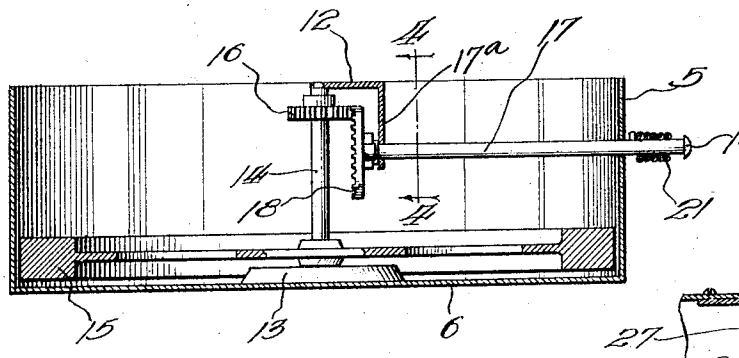
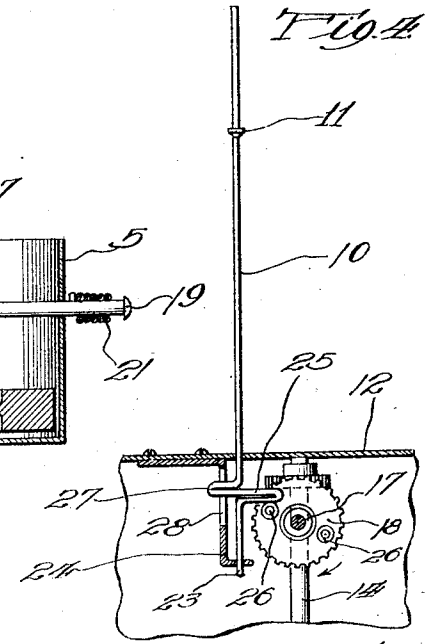


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MECHANICAL TOY.

1,410,429. Specification of Letters Patent. Patented Mar. 21, 1922.

Application filed March 21, 1921. Serial No. 453,882.

To all whom it may concern:

Be it known that I, THOMAS M. VAUGHAN, a citizen of the United States, residing at Lisbon, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Mechanical Toys, of which the following is a specification.

The present invention has to do with improvements in mechanical toys. It has reference particularly to improvements in so-called dancing toys in which a mechanical figure is caused to dance by being oscillated vertically in a jerking manner.

One of the objects of the invention is to provide an improved construction of the toy. In this connection, an object is to simplify the construction and reduce the number of parts, and also to make the parts largely from sheet metal pressed into the desired forms.

Another feature of the invention has to do with the construction of a toy of this kind which shall be operated by the momentum of a rapidly rotating fly wheel, so that when the toy is started by causing said fly wheel to rotate rapidly, the operation of the toy will continue for some time without the application of additional power.

Other objects and uses of the invention will appear from a detailed description of the same, which consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawings:

Figure 1 shows a side elevation of a mechanical toy embodying the features of the present invention, the same being provided with a negro dancer; although it will presently appear that any other suitable form or construction of figure might be substituted in place of the negro;

Fig. 2 shows a plan view of the box and fly wheel and other parts;

Fig. 3 shows a cross section taken on the line 3—3 of Fig. 2, looking in the direction of the arrows; and

Fig. 4 shows a fragmentary section taken on the line 4—4 of Fig. 3, looking in the direction of the arrows.

The operating mechanism is enclosed within a circular box 5 preferably of sheet metal and having the floor 6. A sheet metal cover 7 may be provided for said box, said cover having a downwardly depending flange 8 which closely encircles the box when the cover is in place. The dancing figure 9 is carried by a vertical stem 10 which may be oscillated in a vertical direction. This stem 10 may be provided with a shoulder 11 near its upper end, which shoulder serves to sustain the figure 9; but I do not herein concern myself particularly with the details of construction of the figure itself.

Extending across the upper portion of the box 5 is a cross support 12 which may comprise a section of angle bar as clearly illustrated in Fig. 3. The ends of this cross support are attached to the box 5 in any suitable manner. Resting upon the central portion of the floor 6 is a central journal bearing 13, and the fly wheel shaft 14 is journaled in said bearing and in the cross support 12. A relatively heavy fly wheel 15 is mounted on the lower end of the shaft 14 but in position to clear the floor of the box.

On the upper end of the shaft 14 is a pinion 16, and a drive shaft 17 extends through the box and has its inner end journaled in the vertical flange 17^a of the cross support 12 as clearly shown in Fig. 3. A side tooth gear 18 is mounted on the inner end of the shaft 17 and meshes with the pinion 16.

The shaft 17 extends to the outside of the box and has its outer end upset to provide a head 19. A crank 20 is provided for driving the shaft 17 in order to start up the fly wheel. This crank is conveniently formed from a piece of stiff wire having its inner end twisted around the shaft 17 one or more times as shown in Fig. 2 and adapted to engage a stud 22 secured to the shaft 17. The twisted portion of the wire handle lies between the stud 22 and the head 19 and is held in place by these two parts, although the handle may be slipped back against the head so as to disengage its end from driving connection with the stud. The wire of the handle is twisted in the proper direction to engage the stud 22 in a driving manner in order to cause the shaft 17 and the fly wheel to rotate in the proper direction.

The lower end of the rod 10 passes through the cross support 12 and extends on down into the interior of the box adjacent to the side gear wheel 18. The lower end 23 of the rod 10 works through a bracket 24 which is secured to the under

face of the cross support 12. This rod 10 is folded to provide a sidewise extension 25 which lies against the face of the gear wheel 18 and is adapted to be engaged by one or more studs 26 which project sidewise from the face of the gear 18. As said gear is turned in the direction of the arrow in Fig. 4, the rod 10 will be periodically raised and allowed to drop. If desired, each of the studs 26 may be provided with an anti-friction roller to work against the projection 25. In order to prevent the rod 10 from turning around, I have illustrated another sidewise projection 27 thereon which works through a slot 28 of the bracket 24. The projections 25 and 27 may be simply formed on the rod by bending said rod in the manner clearly illustrated in the figures.

It will be evident that the fly wheel and the shaft 17 should be turned in the direction corresponding to the arrow of Fig. 4, as otherwise the studs 26 will jam against the projection 25. By the use of a crank capable of driving in only one direction, I ensure that the user will always cause the parts to rotate in the proper direction for proper operation without jamming.

While I have herein shown and described only a single embodiment of the features of my present invention, still I do not limit myself to said embodiment except as I may do so in the claims.

Where in this specification and the claims to follow I use the expression "figure" or "dancing figure" or like expression, it will be understood that I do not limit myself to figures of the particular form or construction herein illustrated, but that I contemplate any suitable form or construction of figure, whether it be a simulation of a human being, or animal, or inanimate conception.

I claim:

1. A mechanical toy comprising in combination a box, a support extending across the box and having a flange, a drive shaft extending through the side of the box and through said flange and journaled therein, a drive crank on the outer end of said shaft, a side gear wheel on the inner end of said drive shaft, a vertical fly wheel shaft journaled in the floor of the box and in said support, a momentum fly wheel on said shaft, a pinion on the shaft and meshing with the side gear wheel, a stud on the face of the side gear wheel, a bracket on the support, a vertically oscillatable rod extending through the support, the bracket being slotted, said rod being folded to provide a sidewise extension in position for engagement by the stud on the gear wheel and to provide another sidewise extension for engagement with said slot, and a suitable figure carried by said vertically oscillatable rod, substantially as described.

2. A mechanical toy comprising in combination a box, a support in the same, a journal member on said support, a drive shaft journaled in said support and in the box, driving means on said shaft, a gear on the inner end of the shaft, a fly wheel shaft journaled in the box and in the support, a fly wheel on said fly wheel shaft, a pinion on the fly wheel shaft meshing with the gear, operating means on the gear, a bracket on the support, an oscillatable member working through the support and through said bracket, and means on said member in position to be engaged by the operating means, substantially as described.

3. A mechanical toy comprising in combination a suitable frame, a support on the same, a drive shaft journaled with respect to the said support and the frame, means for rotating said drive shaft, a fly wheel shaft journaled with respect to the frame and the support, a gear and pinion on the drive shaft and the fly wheel shaft and meshing together, operating means on the face of one of said meshing elements, an oscillatable member adjacent to said means, and an engaging portion on the member in position to be engaged by said operating means, substantially as described.

THOMAS M. VAUGHAN.