Aug. 16, 1955 W. OLSEN 2,715,530

COMBINATION PLAY PEN AND CARROUSEL

Filed Oct. 16, 1952

Fig. 1

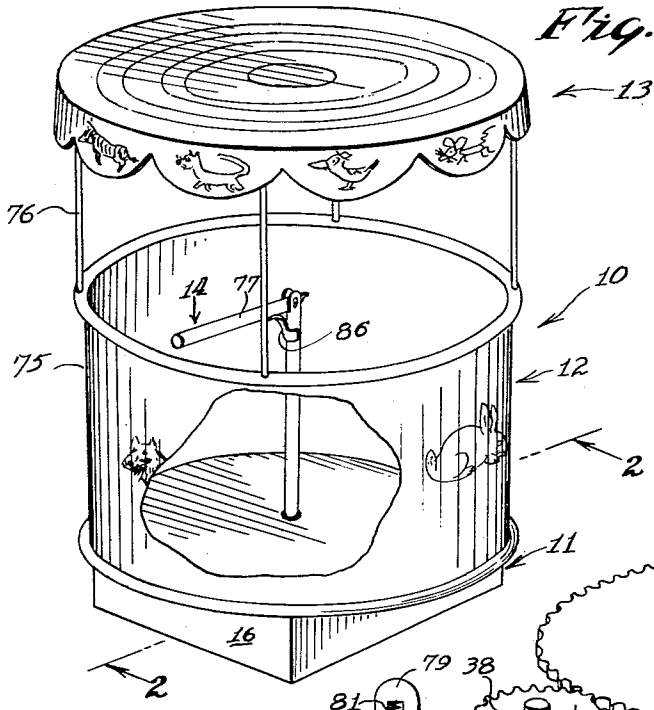


Fig. 3

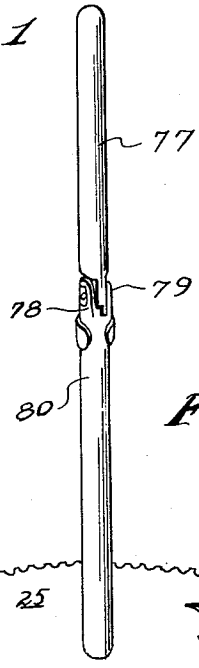
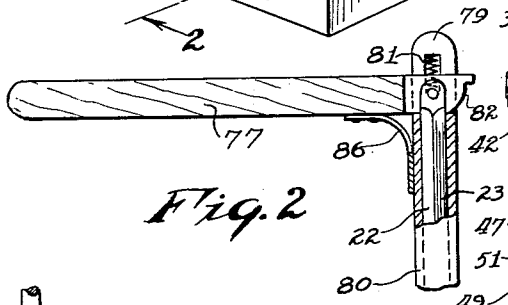


Fig. 2



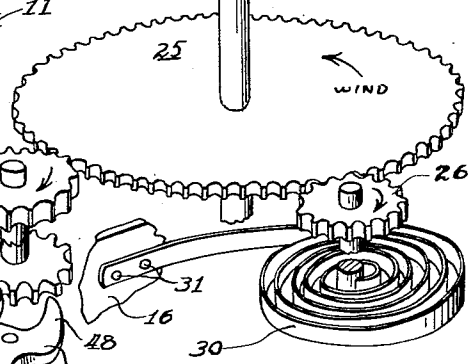
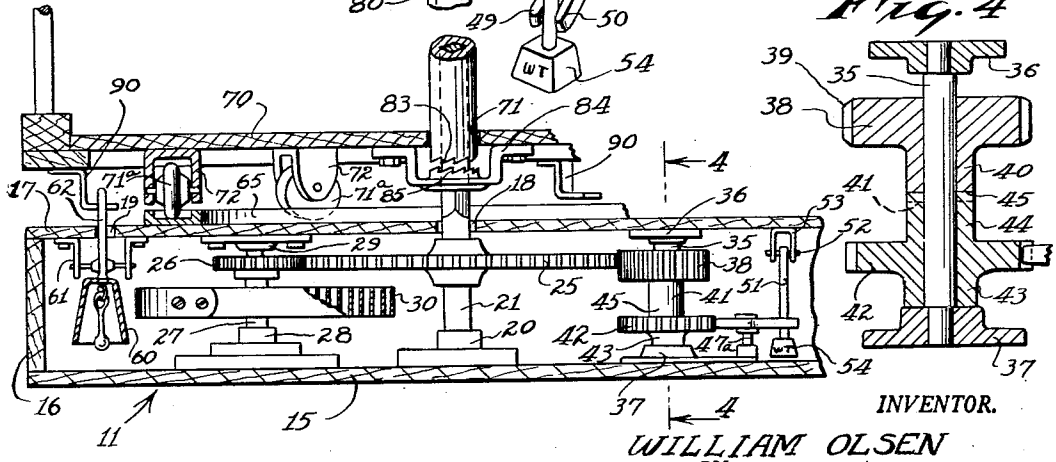


Fig. 4



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COMBINATION PLAY PEN AND CARROUSEL

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2 Claims. (Cl. 272—43)

This invention relates to carrousels and more particularly to a carrousel which is operable by the user.

It is a primary object of this invention to provide a carrousel including, generally, a base, a pen rotatively mounted on the base, operative mechanism within the base for rotating the pen, and actuating means within the pen for effecting operation of the mechanism.

It is another object of the present invention to provide a carrousel which serves as a play pen for small children.

It is another object of the present invention to provide a carrousel for a small child which may be operated by the user.

It is still another object of the present invention to provide a spring operated carrousel.

It is still another object of the present invention to provide a carrousel which upon rotation thereof automatically plays a series of melodious tones.

It is a still further object of the present invention to provide a carrousel which is completely safe for the use of a small child.

It is still a further object of the present invention to provide a spring actuated carrousel having a winding means, which when in operative position, will rotate in one direction only, and when in inoperative position will turn only in the opposite direction.

It is a still further object of the present invention to provide a carrousel which is simple, durable and safe, which is effective for its intended purposes, and which can be manufactured and sold at a reasonable cost.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a device constructed in accordance with the present invention;

Fig. 2 is a partial elevational sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of the operating mechanism of the device of Fig. 1; and

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2.

Referring now more particularly to the drawings, the numeral **10** represents generally a carrousel having a base **11**, a pen **12**, a canopy **13** and an actuating means **14**.

The base **11**, as shown in Fig. 2, includes a bottom wall **15**, which is adapted to rest upon a horizontal supporting surface (not shown). On the bottom wall **15** and extending thereabout are side walls **16**, and resting upon the side walls is a top wall **17**. The walls **15**, **16** and **17**, combining to form the hollow base **11**, may be fabricated of wood, metal or plastic and may be secured together by any suitable means. The top wall **17** is provided with a central aperture **18** and spaced apertures **19** for purposes to be described hereinafter.

Within the base **11** mounted on the bottom wall **15** is a thrust bearing **20** which rotatively supports one end of the vertically disposed shaft **21**. The shaft **21** extends upwardly through the opening **18** out of the base **11** and is formed adjacent its upper end with longitudinally extending flat surfaces **22** and **23**. Fixedly mounted on shaft **21** within the base **11** is a horizontally-disposed spur gear **25**. In meshing engagement with the gear **25** is a pinion **26** which is mounted on the vertically disposed shaft **27**, the latter being rotatively mounted on the journal bearing **28** and **29**. Circumposed about the shaft **27** and having its inner end fixedly secured thereto, is a spiral spring **30**. The spiral spring **30** has its outer end fixedly secured to the base side wall **16** by rivets **31** or other suitable securing means.

Another vertically disposed shaft **35** has its upper and lower end supported in the brackets **36** and **37**, respectively, which brackets are mounted on the upper and lower walls of the base **11**. Slidably and rotatively mounted on the shaft **35** is a spur gear **38** having its teeth in meshing engagement with the teeth of gear **25**. The teeth **39** of gear **38** are substantially wider than the teeth of gear **25** to provide for continuous meshing engagement between said teeth when the gear **38** is shifted vertically. Extending downwardly from gear **38** is a collar **40** which surrounds shaft **35** and is provided with ratchet teeth **41** adjacent its lower end. Rotatively mounted on shaft **35** below gear **38** is another spur gear **42**. The under face of gear **42** is provided with a shoulder **43** which rests upon the bracket **37**. Extending upwardly from the gear **42** and surrounding the shaft **35** is a neck **44** having ratchet teeth **45**. The ratchet teeth **45** are inter-engageable with the ratchet teeth **41** and permit rotation of the gear **38** only in one direction relative to the gear **42**. Rotation of the gear **38** is restrained in the other direction by interlocking of the teeth **41** and **45**.

Thus, rotation of the gear **25**, as indicated in Fig. 3, will effect rotation of the gear **26** and winding of the spring **30**. Rotation of the gear **38** will also be effected, in the direction of the arrow, but the gear **42** will not be rotated as the teeth **41** will ride over the teeth **45**.

In order to regulate the unwinding speed of the mechanism, the member **46** is mounted intermediate its end on journal **47***a* for rocking movement about a vertical axis. The opposite ends of member **46** are bifurcated to form pawls **47** and **48** and fingers **49** and **50**. The pawls **47** and **48** are arranged to engage between spaced pairs of teeth on the gear **42**. The fingers **49** and **50** are adapted to receive therebetween a bar **51** which is suspended at its upper end by the pivot pin **52** which is mounted in the bracket **53**. On the lower end of bar **51** is a weight **54**. Under the force of spring **30**, the gear **26** will rotate the gear **25**, which in turn rotates the gear **38** in a direction such that the gear teeth **41** and **45** will lockingly engage with each other. The gear **42** will then rotate and move the pawls **47** and **48** away from the latter gear. The gravitational force of weight **54** will move member **46** so that pawls **47** and **48** will re-engage with the teeth of gear **42**. This operation will be repeated until the spring **30** has dissipated its energy. It is seen that the mass of weight **54**, that is, the inertia which must be overcome, controls the unwinding rate of speed of the gear **25**, other things being equal.

Also mounted within the base **11** are a plurality of bells **60** which are pivotally suspended by the bracket **61** and have a stem **62** projecting upwardly through the openings **19**, for a purpose to be described hereinafter.

Mounted on the base **11**, on the upper side of wall **17**, is an annular channel or track **65**, the track being arranged centrally about opening **18**.

The pen **12**, which may be of circular, octagonal, or other suitable configuration, is provided with a bottom wall or platform **70** spaced above the track **65** and having a

central aperture **71** extending therethrough for surrounding the upper end of shaft **21**. Secured on the underside of wall **70** are a plurality of circularly disposed spaced wheels or rollers **71***a* which are rotatively mounted in brackets **72**. The wheels **71** are arranged to roll in the track **65** and thereby support the wall **70** for rotation about a vertical axis through opening **71**.

The bottom wall **70** is provided on its upper surface with a peripherally-extending parapet **75**. It is appreciated that the parapet may be a solid wall fabricated of sheet metal, such as plastic, and be within the scope of the present invention. Thus the parapet **75** and the bottom wall **70** combine to form a play pen for a young child. Arranged above the pen **12** is a canopy **13** supported on a plurality of spaced uprights **76**.

For actuating the carrousel a rod or handle **77** has one end pivotally connected to the upper end of shaft **21**. The upper end of shaft **21** is bifurcated as at **78** and **79** to receive the end therebetween of rod **77**. A sheath **80** is circumposed about the upper end of shaft **21** and vertically shiftable thereon. Disposed within the sheath **80** is a spring **81** bearing against the sheath and the shaft **21** to urge the sheath upwardly. The rod **77** is provided with a cam surface **82** engaging the sheath **80** and urging the latter downwardly upon movement of the bar **77** from a horizontal to a vertical position. On the lower end of the sheath **80** are formed a plurality of teeth **83**. A U-shaped bracket **84** having a central opening through its bight portion is secured to the underside of wall **70**. The bracket **84** is arranged so that the shaft **21** extends through the opening in the bight portion of the bracket. Surrounding the opening are a plurality of upwardly extending teeth **85** which are adapted for inter-locking engagement or coupling with the teeth **83** when the sheath **80** is moved downwardly. Thus, with the actuating bar **77** in its horizontal position, rotation of the bar will effect winding of the spring **30**. The bar **77** is urged into its vertical position by the resilient member **86**, in which position the spring **30** will unwind and transmit motion through shaft **21**, the sheath **80** and bracket **84** to the wall **70**.

In order to effect a series of melodious tones, a plurality of brackets **90** are secured to the underside of wall **70** and adapted to engage the stem **62** of the bell **60** upon rotation of the wall **70**.

While various changes may be made in the detail description, it shall be understood that such changes shall be within the spirit and scope of the present invention, as defined by the appended claims:

What is claimed is:

1. In a carrousel, a base, said base being hollow, a platform on top of said base, a circular track on the top of said base and a plurality of spaced rollers on the bottom of said platform and adapted for rolling engagement in said track to rotatively mount said platform on said base, a peripheral parapet on said platform to form therewith a pen, a canopy over said platform and mounted on said parapet, a shaft rotatably mounted within said base and extending upwardly through said platform, a spur gear keyed to said shaft within said base, a first pinion gear rotatably mounted within said base and in mesh with said spur gear, a spring operatively connected to said pinion gear for winding and unwinding upon rotative movement of said pinion in opposite directions, a substantially vertical shaft rotatably mounted within said hollow base, a spur gear slidably and rotatably mounted on said last mentioned shaft, said spur gear being in mesh with said first mentioned spur gear, the teeth of said second spur gear being substantially wider than the teeth of said first spur gear whereby to provide for continuous meshing engagement between said teeth when said second spur gear is shifted vertically, a collar extending downwardly and secured to said second spur gear and surrounding said shaft, said collar being provided with ratchet teeth at its lower end, a third spur gear rotatably mounted below said second spur gear, a neck extending upwardly from said third spur gear and having at its upper end ratchet teeth in mesh with said second spur gear ratchet teeth, a governor comprising a rockable member having one end oppositely connected to said third spur gear for oscillatory movement at a frequency proportional to the rotational speed of said shaft and third spur gear, a mass engageable with the other end of said rockable member and movable therewith, a sheath mounted on said first mentioned shaft for shifting movement toward and away from said platform, protections on said sheath and said platform for interlocking engagement with each other when said sheath is moved towards said platform, a handle having one end connected to said shaft for swinging movement from a position transversely of said shaft to a position longitudinally thereof, said handle engaging said sheath for effecting the shifting movement of the latter upon swinging movement of said handle.

2. In a carrousel according to claim 1, a plurality of bells pivotally mounted within said hollow base and each having a stem projecting upwardly therefrom, and a plurality of depending arms on said platform and engageable with said stems whereby to provide a series of melodious tones upon rotative movement of said platform.

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