Oct. 27, 1970 C. W. AHRENS 3,536,324

ROLLER AND TRACK ASSEMBLY FOR ROTATABLY SUPPORTING A PLAYGROUND TREAD BARREL

Filed Nov. 1, 1968

FIG. 1

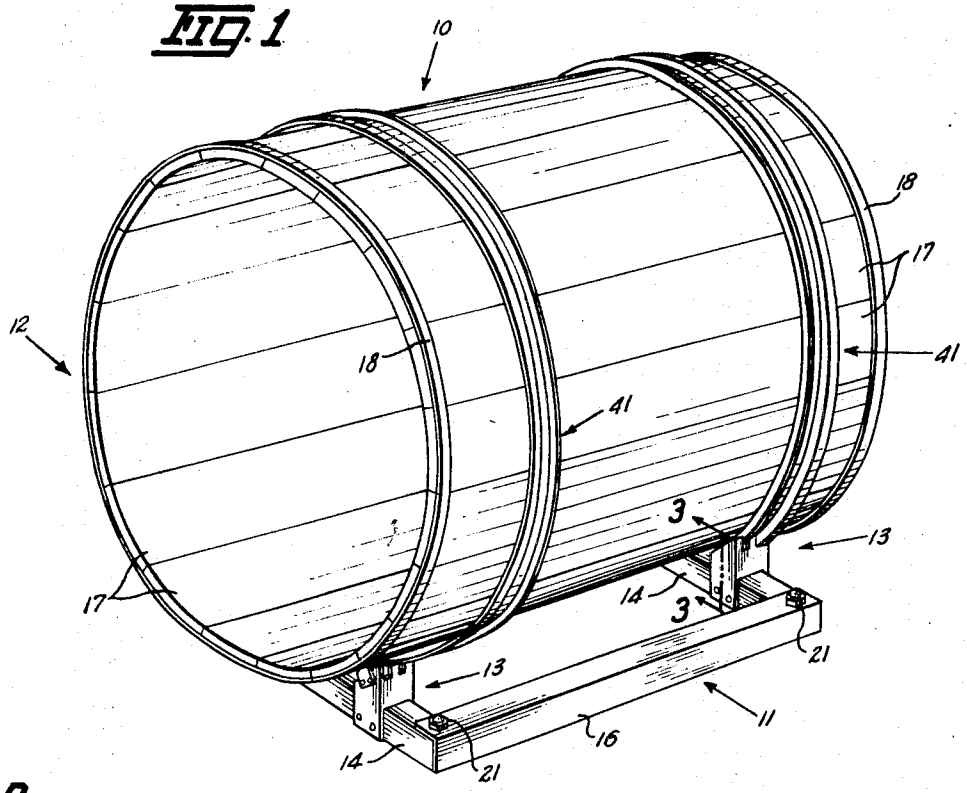


FIG. 2

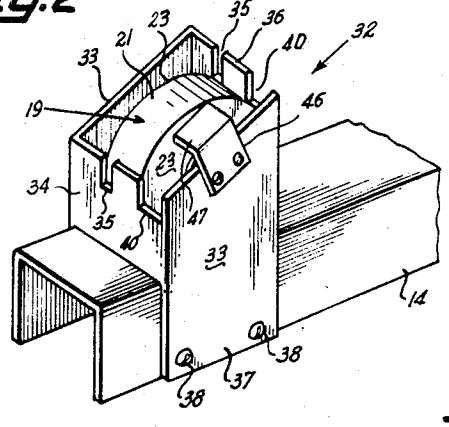


FIG. 3

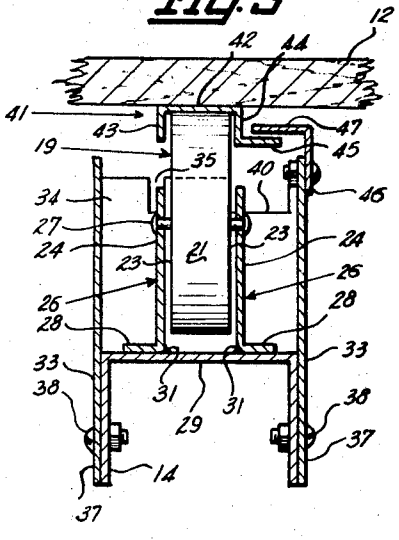
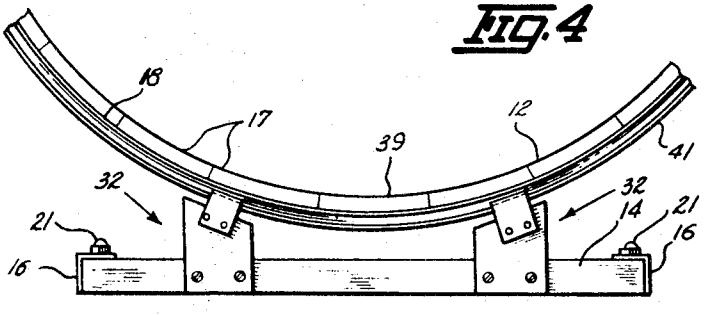


FIG. 4



INVENTOR.
CLAUDE W. AHRENS

BY Randolph L. Powell

ATTORNEY.

United States Patent Office 3,536,324
Patented Oct. 27, 1970

3,536,324

ROLLER AND TRACK ASSEMBLY FOR ROTATABLY SUPPORTING A PLAYGROUND TREAD BARREL

Claude W. Ahrens, W. Highway 6,
Grinnell, Iowa 50112

Filed Nov. 1, 1968, Ser. No. 772,581
Int. Cl. A63g 31/00
U.S. Cl. 272—1 4 Claims

ABSTRACT OF THE DISCLOSURE

The invention provides roller and track assemblies for rotatably supporting a tread barrel for rotation about its longitudinal axis while holding the barrel against removal from a base frame on which the rollers of the assemblies are mounted. The rollers are arranged in pairs to opposite sides of a vertical plane extended through the longitudinal axis of the barrel. Track members ridable on and corresponding to each pair of rollers extend circumferentially about the barrel for rolling engagement with a corresponding pair of rollers. Each roller is received between opposed radially extended side walls or flanges of a track member to limit the axial movement of the barrel relative to the rollers. A laterally extended circular flange on one of the side walls of a track member coacts with a laterally extended stop member on the base frame to hold the track member against radial movement out of engagement with its associated rollers.

SUMMARY OF THE INVENTION

The tread barrel track and roller assembly of this invention provides for a free rotation of the tread barrel about its longitudinal axis while preventing removal of the barrel from its supporting frame. The positioning of the side portions of the barrel track members to opposite sides of the rollers limits or confines the movement of the barrel in an axial direction, and the coacting stop members on the track members and on the barrel supporting frame retains the track members against radial movement out of engagement with the rollers. The barrel is rotated in response to the weight of children attempting to wolk up the inner surface of the barrel. Each pair of rollers corresponding to a track member is located adjacent to the lowermost portion of the barrel to provide for a low support of the barrel so that the open ends of the barrel are readily accessible for the entry of children into the barrel. By virtue of this arrangement and the substantial enclosure of each roller by a housing or guard member and by a corresponding track member children are prevented from getting a hand or foot within the zone of rolling engagement of a track member with a roller.

DETAILED DESCRIPTION OF THE INVENTION

Further objects, features and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawing wherein:

FIG. 1 is a perspective view of the track and roller assembly of this invention shown in assembly relation with a tread barrel;

FIG. 2 is an enlarged perspective view of a roller unit that forms a part of a track and roller assembly;

FIG. 3 is an enlarged detail sectional view of a track and roller assembly taken along line 3—3 of FIG. 1; and

FIG. 4 is a partial end elevational view of the tread barrel playground apparatus shown in FIG. 1.

With reference to the drawing, the tread barrel apparatus, indicated generally as **10** in FIG. 1, includes a base

frame **11**, a tread barrel **12** and pairs of track and roller assemblies **13** of this invention that support the tread barrel **12** for rotation about its longitudinal axis.

The base frame **11** is of an open substantially square shape formed by a pair of opposite inverted end channel members **14** and a pair of angle iron side members **16** interconnected by bolt assemblies **21**. The tread barrel **12** includes stave members **17** arranged in a side by side relation and connected together by means including end hoops **18**.

Since each roller and track assembly **13** is of a similar construction and similarly assembled with the base frame **11** and tread barrel **12**, only one of such assemblies **13** will be described in detail with like numbers applied to corresponding parts.

A track and roller assembly **13** includes a roller **19** of a rubber or like composition (FIG. 3) having a peripheral surface **21** and side surfaces **23**. The roller **19** is mounted between the upright legs **24** of oppositely arranged angle iron members **26**, and is rotatable on a shaft **27**, extended between and supported on the upright legs **24**, for rotation about an axis parallel to the axis of rotation of the tread barrel **12**. The horizontal legs **28** of the angle members **26** are secured to the base **29** of a channel end member **14** by weldments **31** or the like.

The roller **19** and angle members **26** (FIG. 2) are enclosed by a housing **32** of a rectangular shape in transverse cross section having a pair of side walls **33** and a pair of end walls **34** and **36**. The side walls **33** are formed with depending lower end portions **37** that straddle a channel end member **14** and are rigidly connected thereto by bolt assemblies **38**. The lower edges of the end walls **34** and **36** rest directly on the top surface of the base **29** of a channel member **14**.

A pair of the rollers **19** are mounted on each channel member **14** to opposite sides of a vertical plane extended through the longitudinal axis of the tread barrel **12** at positions adjacent the lowermost side portion **39** of the barrel as shown in FIG. 4. The top of the housing **32** is inclined downwardly and inwardly toward the barrel portion **39** for clearance relative to the peripheral surface of the barrel. The upper end of each end wall **34** and **36** (FIG. 2) is formed with a pair of transversely spaced slots **35** and **40** for a purpose to appear later.

A circular track or rail member **41** (FIGS. 1 and 2). foming part of an assembly **13**, is of a channel shape in transverse cross section and has a base portion **42** extended circumferentially about and secured to the barrel **12** and leg portions **43** and **44** extended radially outwardly therefrom. The leg **44** terminates in a flange **45** that projects laterally outwardly in a direction toward an adjacent end of the barrel **12** (FIG. 1).

The outer peripheral portion of a roller **19** (FIG. 3) is positioned between the legs **43** and **44** of a corresponding track member **41** for rolling engagement of its peripheral surface **21** on the base portion **42** of the track member. The legs **43** and **44** of a track member thus coact with the side surfaces **23** of a roller **19** to limit the axial movement of the tread barrel **12** relative to the rollers **19** and in turn to the base frame **11**.

Upward movement of the track member legs **43** and **44** to positions out of a straddling relation with the peripheral portions of the rollers **19** is prevented by the provision of a stop member **46** carried on a side wall **33** so as to form an upright extension thereof. The stop member **46** is formed from a flat strap material into a right angle shape and is secured to a side wall **33** so that one of its leg sections **47** projects inwardly of and above the side wall **33** with its free end portion in an adjacent overlapping relation with the flange **45** at a position between the flange and the outer peripheral surface of the barrel **12**. As a result the leg section **47** coacts with the flange **45** to

hold the track member legs **43** and **44** against movement out of a contacting engagement with the side surface **23** of a roller **19**. The barrel **12** is thus maintained against accidental removal from the frame **11**.

It is seen, therefore, that the track legs **43** and **44** coact with the side surfaces **23** of the rollers **19** to limit axial movement of the barrel **12** relative to the frame **11**, and that the lateral flange **45** and stop member **46** coact to limit movement of the barrel **12** radially of the rollers **19**. The barrel **12** is thus freely rotatable about its longitudinal axis while being held against axial movement relative to the frame **11** and against removal from the frame.

The tread barrel **12** is open at its ends to allow children free access to the inside thereof, and is of a sufficient diameter to permit children to stand upright transversely of the barrel. As the children attempt to walk up the sides of the barrel, the downward force of their weight causes the barrel to rotate about its longitudinal axis. The slots **35** and **40** at the upper ends of the end walls **34** and **36** are in alignment with the track leg **43** and flange **45**, respectively. The track leg **43** and flange **45** are thus movable through their respective slots **35** and **40** as the tracks **41** ride on the rollers **19**. It will also be apparent that the track legs **43** and **44** serve as a covering shield relative to the upper portion of a roller **19**. As a result the zone of the rolling engagement of a track **41** with a roller **19** is completely shielded against the placement therein of a hand or foot by a child using the tread barrel.

I claim:

1. A roller and track assembly for a tread barrel comprising:

(a) a base frame,

(b) a plurality of pairs of rollers spaced longitudinally of said base frame, with the rollers in a pair spaced transversely of the base frame to opposite sides of a vertical plane extended through the longitudinal axis of the barrel.

(c) circular track members each corresponding to a pair of rollers extended circumferentially of and secured to the tread barrel for rolling engagement on a corresponding pair of rollers,

(d) first coacting means on each track member and associated pair of rollers for holding said tread barrel against axial movement relative to said rollers, and

(e) second coacting means on each track member and on said base frame for holding said track members against upward movement out of rolling engagement with the pair of rollers corresponding thereto.

2. A roller and track assembly for a tread barrel, as defined in claim **1**, wherein:

(a) each track member is of a channel shape in transverse cross section having a base portion extended circumferentially about said barrel and a pair of leg portions extended radially of said barrel,

(b) each of said rollers has a peripheral portion positioned between said leg portions with the peripheral surface thereof in rolling engagement with said base portion, and

(c) said first coacting means includes said leg portions of each track member and the side surfaces of the rollers.

3. A roller and track assembly for a tread barrel, as defined in claim **2**, wherein:

(a) said second coacting means comprises a flange member laterally extended from one of each said pair of leg portions and a stop arm adjacent each roller rigidly connected at one end to said base frame and extended upwardly therefrom,

(b) said stop arm having a laterally extended portion projected in an overlapped relation with said flange member at a position between said flange member and the peripheral surface of the tread barrel.

4. A roller and track assembly as defined in claim **1** including:

(a) an upright tubular housing member for enclosing each roller mounted on said frame and extended upwardly adjacent the top side of a roller,

(b) each said housing having slots formed in the upper ends of a pair of opposite side walls thereof to provide for the travel therein of a track member into rolling engagement with said top side of a roller.

References Cited

UNITED STATES PATENTS

45,698	1/1865	Camp	241—178
883,485	3/1908	Ridgway	272—1
903,632	11/1908	Tilyou	272—1

FOREIGN PATENTS

166,771	9/1950	Austria.
26,372	AD 1912	Great Britain.
28,036	AD 1913	Great Britain.

ANTON O. OECHSLE, Primary Examiner

A. W. KRAMER, Assistant Examiner

U.S. Cl. X.R.

104—77; 272—69