Nov. 14, 1933. W. E. HASKELL 1,935,558

FERRIS WHEEL

Filed May 5, 1931 2 Sheets-Sheet 1

Fig. 1.

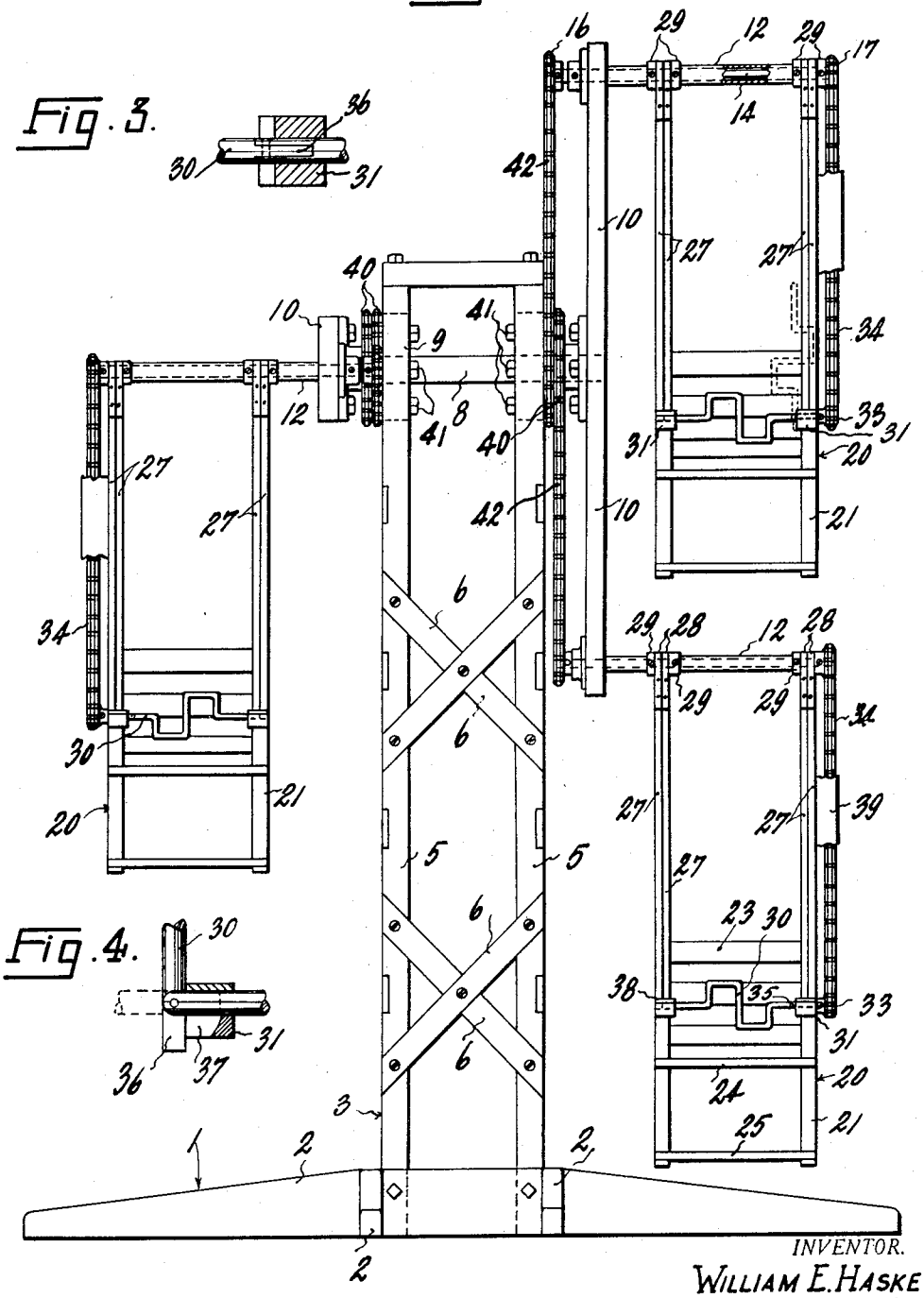


Fig. 3.

Fig. 4.

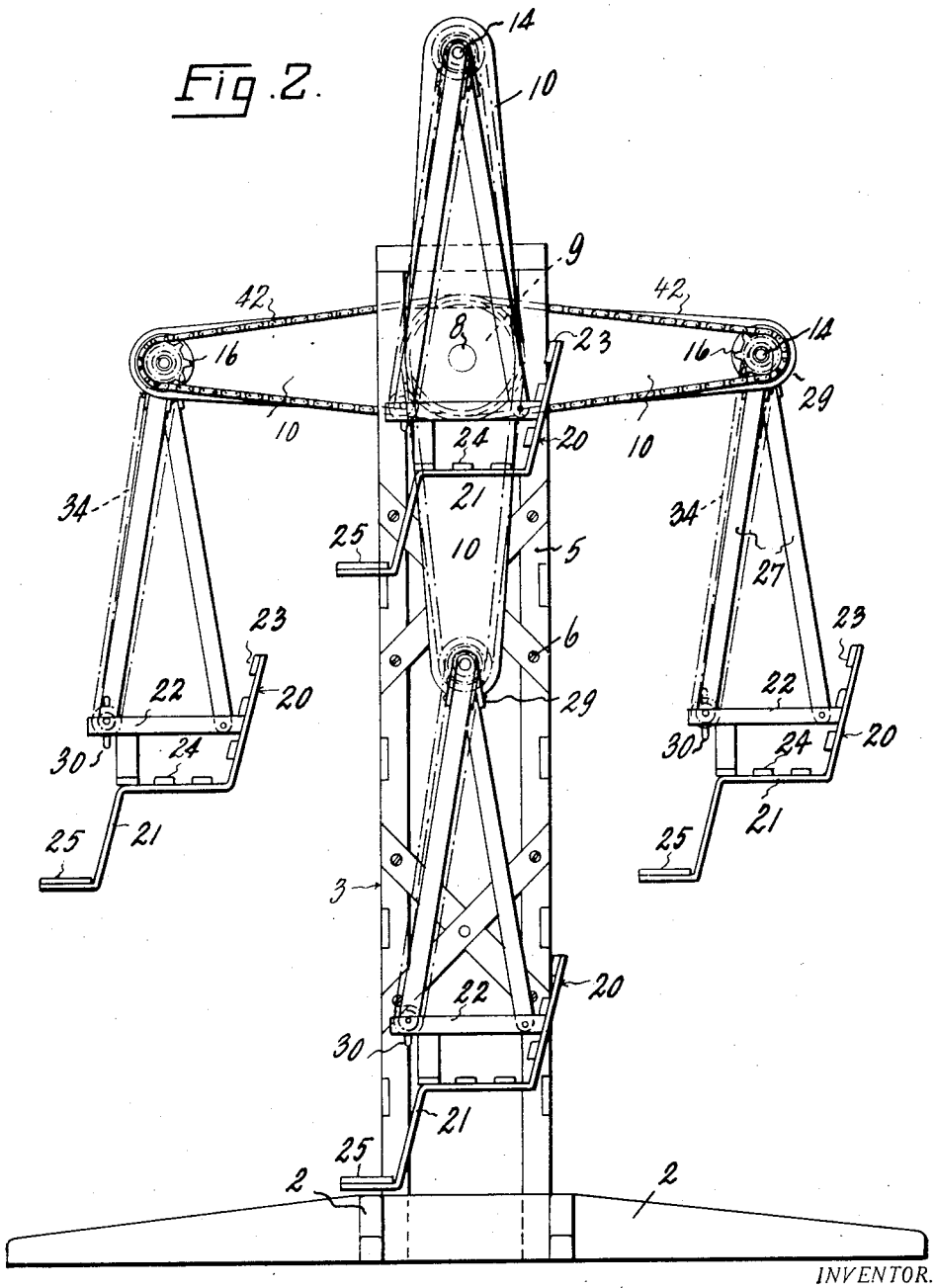
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Fig. 2.



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FERRIS WHEEL

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Application May 5, 1931. Serial No. 535,131

4 Claims. (Cl. 272—33)

This invention relates to Ferris wheels and more particularly to Ferris wheels for use on children's playgrounds.

One object of my invention is to provide an improved structure of this type which is better adapted for operation by children than Ferris wheels of prior construction. A further object is to decrease the height of the structure. Other and further objects will be apparent from the following specification and claims.

In the accompanying drawings which illustrate one embodiment of the invention:

Fig. 1 is a front elevation;

Fig. 2 is a side elevation looking from the right of Fig. 1;

Fig. 3 is a detail sectional plan view, on a larger scale, of the locking mechanism; and

Fig. 4 is a vertical sectional view of the structure of Fig. 3 showing the parts in locked position.

Referring to the drawings, 1 designates the base of the device, the base being formed of cross pieces 2 which support a central standard 3. Standard 3 may be of any suitable construction and, as shown, is formed of corner posts 5 trussed together by cross pieces 6. A transverse shaft 8 is supported in bearings 9 secured in the standard 3, and is provided at each end with two diametrically extending arms 10 rigidly secured to the shaft, the arms on opposite sides of standard 3 being at right angles to each other. The free end of each arm is provided with an outwardly extending hollow shaft 12 rigidly fixed to the arm. Each hollow shaft 12 may be provided adjacent each end with internal ball bearings of conventional type (not shown) in which shafts 14 turn. The shafts 14 extend beyond the ends of hollow shafts 12 and to their inner and outer ends are fixed sprockets 16 and 17 respectively.

The space between opposite pairs of shafts 12 is just sufficient to permit clearance between them of chairs 20, and the distance between the shafts 12, when in their lowermost position, and the base 1 is also just sufficient to permit clearance of the chairs, this arrangement having particular advantages in decreasing the necessary height of the apparatus as will later be more specifically pointed out.

The chairs, as shown, are formed of side irons 12 bent to chair form, to which are bolted or otherwise secured arms 22, slatted back sections 23, similar seat sections 24, and foot rests 25. The chairs are suspended from shafts 12 by hanger members 27 pivotally attached on the shafts as by strap irons 28, the chairs being kept in proper position lengthwise of the shafts by collars 29.

As shown in the drawings, each chair is provided with a drive shaft 30, but it will be understood that the device may be driven from one or more chairs as may be desired. Shafts 30 are bent intermediate their ends, as best shown in Fig. 1, and are journaled in bearings 31 carried by the arms of the chairs. The outer ends of shafts 30 are provided with sprockets 33 which are connected by sprocket chains 34 to their respective associated sprockets 17. Shafts 30 are hinged adjacent their outer bearings as at 35, while the inner bearing is provided with a removable cap 38 so that the shaft may be raised as shown in dotted lines in Fig. 1 to permit a child to enter the chair. The hinged portion of the shafts 30 may be extended, as shown in Figs. 3 and 4, to form a key 36 adapted when shafts are in raised position to engage in slots 37 formed in the associated bearing 31 to lock the drive. Preferably the shaft 30 passes through the forward hanger member of each chair so that the chains 34 run adjacent the latter members permitting the chairs to be guarded by enclosure in casings 39 which may be secured to said members.

Sprocket wheels 40 are rigidly fixed to the sides of standard 1, concentric with shaft 8, as by bolts 41, and are connected with sprockets 16 by chains 42.

As will be clear from the above description and drawings, rotation of one or more of the shafts 30 will, through chains 34 and sprockets 17, rotate the associated shafts 14, causing chains 42, driven by sprockets 16 to travel around fixed sprockets 40, thus rotating the arms 10.

Due to the arrangement of the chairs on cantilever shafts 12 extending outwardly from arms 10, the chairs may pass the axis of rotation of the arms 10 with the result that the chairs in their rotation need rise no higher than is necessary to clear each other and the child in the upper chair is only a relatively few feet from the ground. The arrangement of the arms 10 on opposite sides of the standard at right angles to each other keeps the weight uniformly distributed resulting in a smooth balanced rotation of the device. Furthermore, since the center of gravity of the device is substantially lower than with prior constructions, the tendency to overturning is less and no elaborate or extended anchoring means is necessary, resulting in a compact and easily movable structure and one which takes up a relatively small ground area. The simplicity and compactness of

construction afforded by my novel arrangement of the parts renders the device suitable for use in private play yards as well as on public playgrounds.

Various changes and modifications may be made within the scope of the invention. For example, the chain and sprocket drive may be replaced by any other suitable type of drive, and numerous forms of carriages may be substituted for the chairs or the chairs and positive drive may be omitted and the device operated by the children grasping the cantilever shafts 12 in their hands and leaping upward, to relieve their weight, on the upward portion of the movement of the arms 10. It will therefore be understood that I do not limit myself to the detailed structure shown.

What I claim is:

1. A Ferris wheel which comprises a support, a horizontal shaft rotatably mounted in said support, diametrically extending arms secured to said shaft for rotation in a vertical plane, cantilever shafts extending from the ends of said arms, and carriages pivotally suspended from said cantilever shafts to swing across the axis of rotation of the arms, the space between said shafts being just sufficient to permit clearance of the carriages as the arms rotate, and means operative from at least one of the carriages to cause rotation of the arms, said means comprising a crank mounted in the carriage and driving means connecting said crank and said horizontal shaft.

2. A Ferris wheel which comprises a vertical support, a horizontal shaft journaled adjacent the upper end of the support, a pair of diametrically extending arms secured to each end of said shaft, the arms on one end of the shaft being positioned at right angles to those on the other end, and cantilever shafts extending outwardly from each of said arms.

3. A Ferris wheel which comprises a vertical support, a horizontal shaft journaled adjacent the upper end of the support, a pair of diametrically extending arms secured to each end of said shaft, the arms on one end of the shaft being positioned at right angles to those on the other end, cantilever shafts extending outwardly from each of said arms, and carriages pivotally suspended from said shafts.

4. A Ferris wheel which comprises a vertical support, a horizontal shaft journaled adjacent the upper end of the support, diametrically extending arms secured to the ends of said shaft, the arms on one end of the shaft being positioned at right angles to those on the other end, cantilever shafts extending outwardly from said arms, at least one of said shafts being hollow, carriages pivotally suspended from said shafts, a sprocket non-rotatably fixed to the vertical support concentric with said horizontal shaft, a driven shaft passing through and rotatably mounted in said hollow shaft, sprockets respectively secured to the inner and outer ends of said driven shaft, a sprocket chain connecting the inner sprocket on said driven shaft with said non-rotatable sprocket, a crank shaft carried by the chair suspended from the hollow shaft, a sprocket on said crank shaft and a chain connecting said last named sprocket with the outer sprocket on said driven shaft.

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