March 11, 1924. 1,486,669

J. F. KLINE

CARROUSEL

Filed Feb. 26, 1923

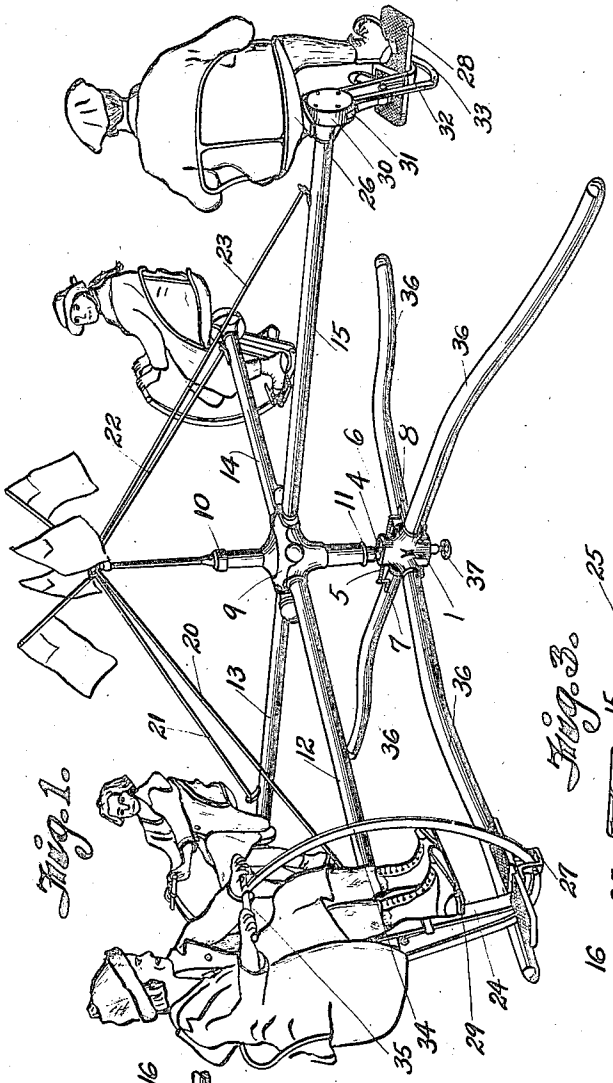


Fig. 1.

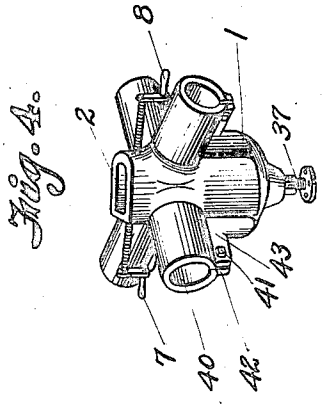


Fig. 4.

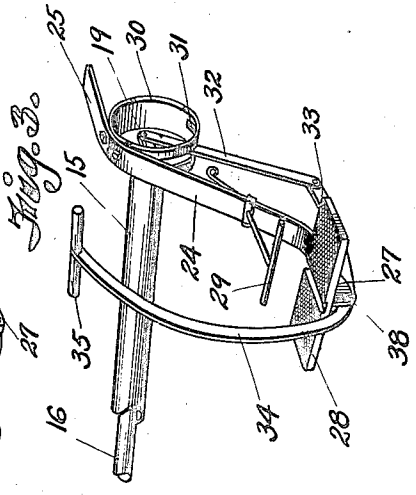


Fig. 3.

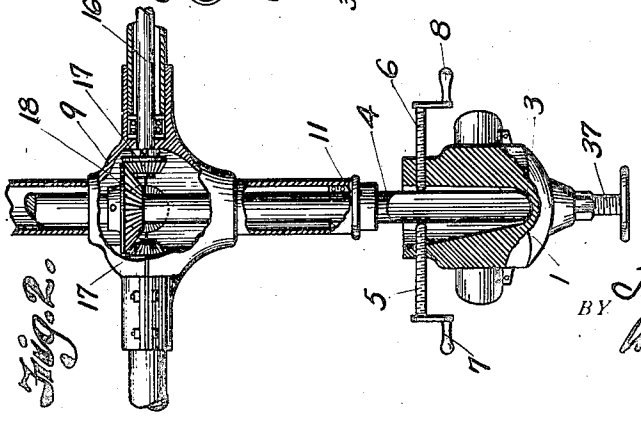


Fig. 2.

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UNITED STATES PATENT OFFICE.

JAMES F. KLINE, OF AMARILLO, TEXAS.

CARROUSEL.

Application filed February 26, 1923. Serial No. 621,279.

To all whom it may concern:

Be it known that I, JAMES F. KLINE, a citizen of the United States, residing at Amarillo, in the county of Potter and State of Texas, have invented certain new and useful Improvements in Carrousels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to carrousels or merry-go-rounds.

The primary object of the invention is to provide a simple, easily self-propelled merry-go-round, the construction being such that the passengers may operate the machine.

The novel construction of the invention will be apparent by reference to the following description in connection with the accompanying drawings, in which—

Fig. 1 is a perspective view of a complete machine constructed in accordance with my invention.

Fig. 2 is a sectional view through the center of the rotating spider, the standard about which the spider rotates being shown in elevation and the base block being shown partly in section.

Fig. 3 is a fragmentary perspective view of one of the spider arms showing the spindle operating mechanism, and

Fig. 4 is a perspective view of the base block.

The base block 1 is provided with a vertical recess 2, the bottom of which is curved as at 3 to provide a seat for the spider supporting spindle 4. The lower end of the standard 4 is angular in cross section so that it can be held in place by the adjusting and fastening screws 5 and 6, the screws passing through the base block and adapted to be operated by cranks 7 and 8.

The standard 4 extends upwardly to a suitable height and it extends through the spider head 9, which is sleeved upon the standard and which is supported upon the standard by bearings 10 and 11. The spider head 9 has hollow radial arms 12, 13, 14 and 15 rigidly fastened thereto and these are provided with bearings at their respective ends to support the crank shafts 16. On the inner end of each crank shaft is a pinion 17, which meshes with a gear 18 fixed on the standard 4. The shafts 16 rotate in bearings in the respective ends of the spider arms and on the outer end of each shaft 16 is a crank 19, by means of which the shafts 16 may be rotated through the medium of suitable lever mechanism to be hereinafter described.

The hollow spider arms 12, 13, 14 and 15 are braced by the tie rods 20, 21, 22 and 23, which are connected to the spider arms and to the top of the standard, the connection at the top of the standard being such that the tie rods can rotate with the spider arms. Each spider arm carries a substantially S-shaped bracket 24 and each bracket has a substantially lateral upper end 25 to support a seat 26 and a substantially horizontal lower end 27 to support a foot rest 28. The intermediate portion of each bracket 24 may support a supplemental foot rest 29, the latter foot rest being for juveniles or small children while the foot rest 28 is adapted to accommodate larger persons.

The brackets 24 are shown as supported upon rings 30, which are carried by the ends of the spider arms and each ring is slotted, as at 31, to accommodate a link 32 which projects through the slot and which engages the crank 19. The lower end of each link 32 is pivotally secured to an operating lever. The operating lever is an elbow lever having a substantially lateral arm 33 and a substantially vertical arm 34, the vertical arm being curved toward the seat and provided with a handle 35.

The base block 4 is supported upon radial feet 36 and the lower portion of the base block is provided with an adjusting screw 37 to provide a fifth foot for the frame, the screw 37 bearing upon the ground to prevent the other four feet weaving on the ground.

When the parts are assembled and the occupants are seated, the machine should be given an initial start and thereafter it may be operated by oscillating the levers 34; that is, the levers will be rocked on their fulcrums 38 which are shown as pins at the forward ends of the portions 27 of the brackets 24. As the lever arms 34 are rocked, an oscillating movement will be imparted to the links 32 to move the cranks through arcs about the axes of the shafts 16. Therefore, the pinion gears 17 will

move about the fixed gear 18, causing the spider and its appurtenances to rotate about the axis of the standard 4.

The radial feet 36 may be secured to the block 3 by introducing their ends into the sockets 40. The sockets are preferably split and can be drawn together by bolts 41, which pass through the flanges 42 and 43 of the sockets. The feet 36 may consist of pipe, properly bent to fashion them so that the block will be above the ground. The spider arms 12, 13, 14 and 15 may also consist of pipe and for the purpose of cheapness, I recommend that pipe be used wherever expedient, that the brackets be made of heavy flat stock metal and that the lever be made of bar metal; indeed, the merry-go-round can be formed almost entirely of commercial shapes and materials so that the completed device will be quite inexpensive.

The socket in the base block is wider at the top than at the bottom; therefore, by means of the adjusting screw the standard can be shifted out of the vertical and since the spider arms 12, 13, 14 and 15 will always be at right angles to the shaft, it will be apparent that if the standard is shifted out of the vertical, one spider arm will be lower than the one diametrically opposite it. The result will be that as the spider arms rotate, the ends of the spider arms and consequently the seats will rise and fall, giving the effect of an ocean wave ride. This adds to the pleasure of the occupant of the carrousel. The screw can also assist in properly positioning the shaft when the legs or feet 36 are on unequal ground.

Another important feature of the invention is that the speed of the machine can be under the control of any one operator or a number of operators. For example, if the operator on one seat finds that the machine is being rotated too fast, he can reverse the pressure on the lever 34, whereupon the lever and its connections will constitute a brake, holding back or resisting the efforts of the other occupants to speed up the machine. The machine, as stated before, should be started by giving it an initial start, whereupon the motion can be kept up through the operating mechanism.

What I claim and desire to secure by Letters-Patent is:

1. In a device of the class described, a block having a vertical recess, a standard mounted in the recess, means passing through the block for engaging the standard to secure it tight in the recess, a screw passing through the bottom of the block in line with the standard, a gear fixed on the standard, a spider head rotatable on the standard, spider arms carried by the head, crank shafts extending longitudinally through the arms, gears on the ends of the crank shafts and engaging the gear on the standard, brackets at the ends of the spider arms, seats on the brackets, foot rests on the brackets, rocking levers on the brackets, and means connecting the rocking levers to the crank shafts.

2. In a device of the class described, a base block having radial sockets, radial feet in the sockets, a standard carried by the block, a gear fixed on the standard, spider arms mounted to rotate about the standard, rock shafts in the spider arms, gears on the rock shafts for engaging the fixed gear on the standard, rings on the ends of the spider arms having slotted portions, links engaging the crank shafts and passing through the slots, brackets on the rings, seats on the brackets, and rocking levers on the brackets engaging the links.

3. In a device of the class described, a block having radial sockets, radial supporting feet in said sockets, the block having a recess, a standard in the recess, means for fastening the standard to the block in a position inclined from the vertical, a gear fixed on the standard, a spider head mounted to rotate about the standard, spider arms carried by the head, passenger supports carried by the spider arms, crank shafts in the spider arms having gears meshing with the gear on the standard, and means accessible from the passenger supports for operating the crank shafts so that the spider head will be rotated about the inclined standard to cause the passenger supports to rise and fall during their rotation.

In testimony whereof I affix my signature.

JAMES F. KLINE.