

982,310.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 1.

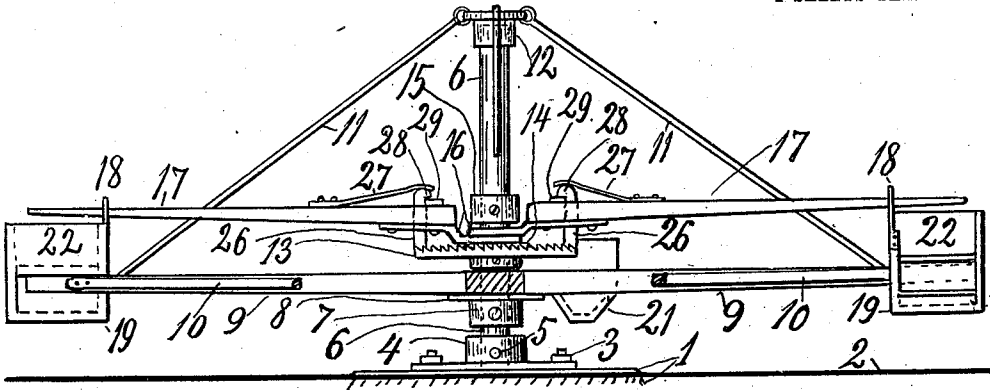


FIG. 2.

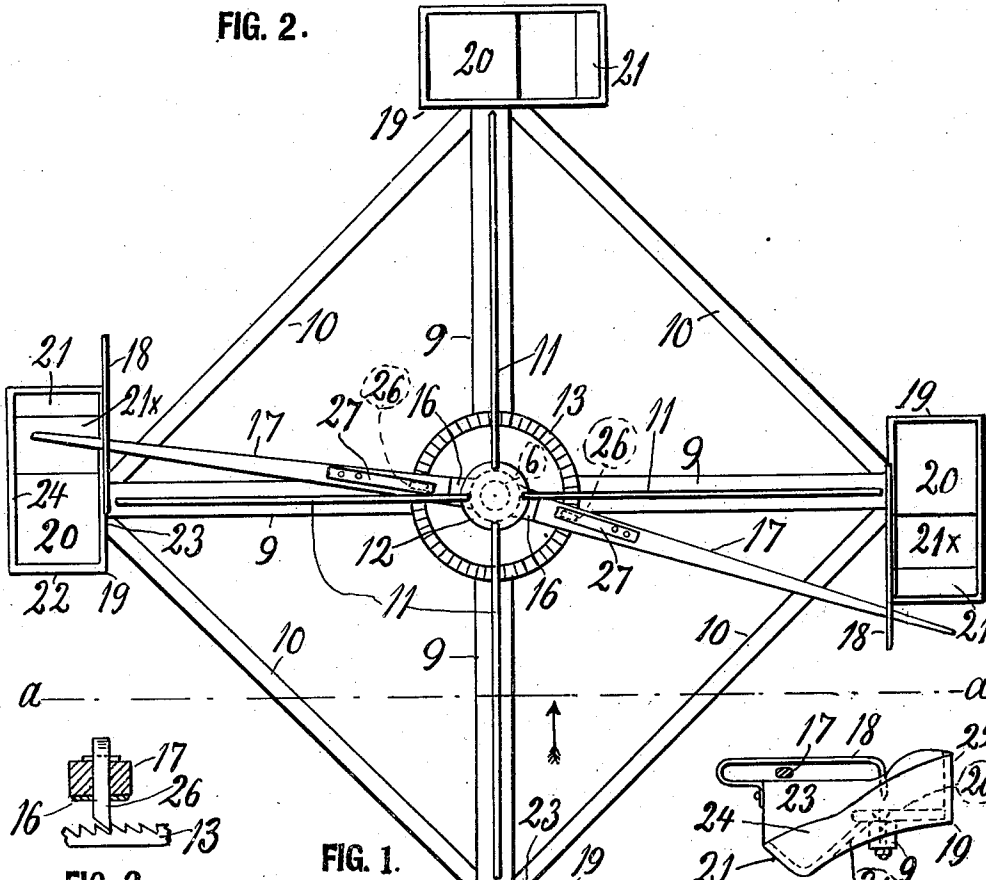


FIG. 1.

FIG. 3.

WITNESSES:

M. M. Carlsson.
A. E. Carlsson.

FIG. 4.

INVENTOR:

Donald Stewart.
BY HIS ATTORNEY:
A. M. Carlsson.

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2 SHEETS-SHEET 2.

982,310.

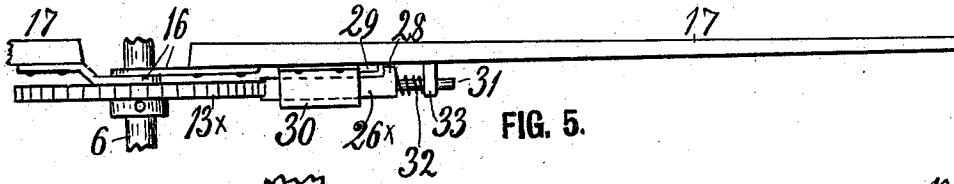


FIG. 5.

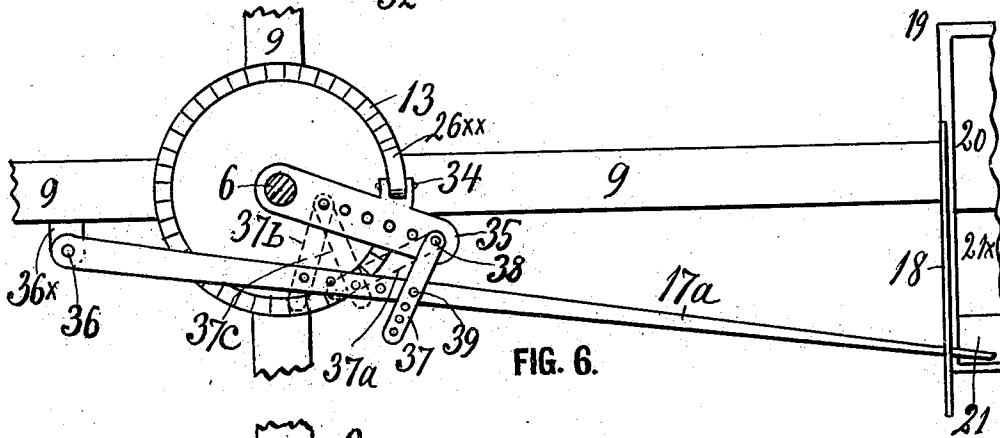


FIG. 6.

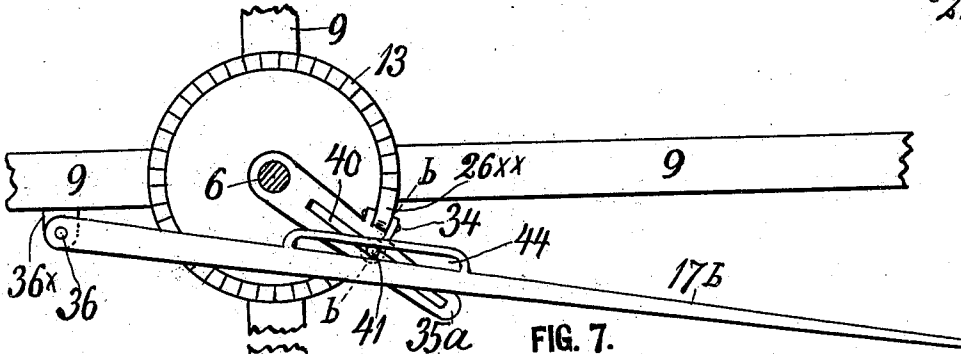


FIG. 7.

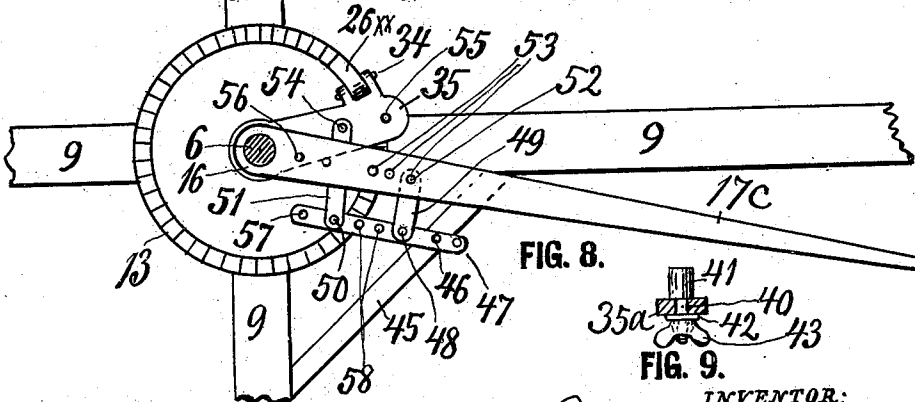


FIG. 8.

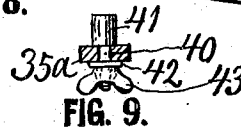


FIG. 9.

WITNESSES:

W. W. Carlson.
A. C. Carlson

INVENTOR:
Donald Stewart.
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UNITED STATES PATENT OFFICE.

DONALD STEWART, OF REDWOOD FALLS, MINNESOTA.

MERRY-GO-ROUND.

982,310.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed January 20, 1910. Serial No. 539,185.

To all whom it may concern:

Be it known that I, DONALD STEWART, a citizen of the United States, residing at Redwood Falls, in the county of Redwood and State of Minnesota, have invented a new and useful Merry-Go-Round, of which the following is a specification.

My invention relates to devices of the kind nearest known as merry-go-round; and the object is to provide an apparatus in that line which is especially adapted for exercise and amusement for children and grown persons upon private and public play ground, and which will give the operating riders a good and interesting exercise as oarsmen because the device is operated by rowing movements. This and other objects I attain by the novel construction and arrangement of parts illustrated in the accompanying drawing, in which,—

Figure 1 is a top or plan view of my merry-go-round in its general form. Fig. 2 is a sectional side elevation on line *a—a* of Fig. 1. Fig. 3 is a fragmentary detail view of the outer edge of the ratchet wheel in Fig. 1 and the dog playing thereon and the lever in which the dog is mounted. Fig. 4 is an elevation of the outer side of any of the four seats shown in Fig. 1. Fig. 5 is a portion of Fig. 1 with a ratchet wheel and dog thereon modified. Figs. 6, 7 and 8 are portions of Fig. 1 with the operating mechanism more or less modified. Fig. 9 is a cross section on line *b—b* of lever or arm 35^a in Fig. 7 to show how the stud in the slot thereof is arranged.

Referring to the drawing by reference numerals, 1 designates a base which for a small portable apparatus may be made of timber and placed upon the ground 2, but for a larger apparatus the base may preferably be made of concrete and set or sunk in the ground. Upon the base is bolted at 3 a socket 4 in which is detachably secured by a set screw 5 a round standard 6. Near the lower end of the standard is secured a collar 7, upon which rests and rotates a spider plate 8, on the top of which is secured the main rotary frame of the device, said frame consisting mainly of a number of radial horizontal arms 9, with intermediate horizontal braces 10. The outer ends of the radial arms are supported by inclined braces 11 extending therefrom to a collar 12 which is rotatably mounted on the top of the standard.

Near above the main frame is secured on the standard a ratchet wheel 13, which may be a common ratchet as 13^x in Fig. 5 or a crown ratchet as in most of the other figures. Between the hub 14 of the ratchet and a collar 15 fixed thereabove on the standard is pivotally placed or journaled the inner end 16 of a horizontal operating lever 17. While it is possible to operate the device with only one such lever I have shown two arranged in diametrically opposite directions, and it is obvious that even more than two levers may be employed. The outer end of each lever 17 is supported and guided in a guide 18 (see Fig. 4) which is provided upon the adjacent side of the rider's and operator's seat; which seat may be of any desired type, but in the present illustrations I have shown it as resembling a buggy body 19 secured one upon the outer end of each of the radial arms 9, and provided with a seat proper 20, an inclined foot board 21 and bottom 21^x, a back rest 22, a high inner side 23 on which the guide 18 is mounted and a lower outer side wall 24, to facilitate entering and leaving the device, and also to give ample room for the arms of the operator.

Each operating lever 17 carries a dog or pawl which plays over the ratchet teeth in the direction of rotation and in the opposite direction engages the teeth of the wheel and produces the rotary movement of the frame, as the operator applies the lever much in the same manner as he would operate an ordinary oar in rowing a boat. The pawl thus employed is in Figs. 1, 2 and 3 shown as a vertically sliding short rod or plug 26 slidably mounted in the lever and engaging the ratchet wheel with its lower end, while the upper end is preferably engaged by a spring 27 to insure quick engagement with the ratchet. The pawl is also provided with a lateral arm 28 which falls upon a cushion 29 secured on the lever so as to prevent the lower end of the pawl from making noise by striking on the gear between its ratchet teeth; the ratchet mechanism is thus practically noiseless. This advantage is also obtained in Fig. 5, where the ratchet wheel 13^x is of the ordinary type and the pawl 26^x is sliding horizontally against it, being supported in a bearing 30 and having a tail 31 upon which a spring 32 is compressed against an apertured stud 33, and the arm 28 strikes the cushion 29. In Figs. 6, 7 and 8 the pawl may be the same as in Fig. 3, but

to simplify the illustration I have in said views shown it as of the common dragging type 26^{xx}, pivoted between two lugs of a radial arm 35, which is journaled on the standard and operated by the hand lever and an intermediate speed-changing mechanism, which will enable a strong operator to give the frame an increased speed without increasing the speed or stroke of the hand lever; and if the operator is a child or young person he may by said mechanism be able to operate the device at such slow speed as the available strength will warrant and with normal speed of the lever. Such speed changing mechanism is in Fig. 6 provided by pivoting the hand lever 17^a at 36 to a bracket 36^x on the rotary frame 9 and connecting the lever to the arm 35 by a link 37, which as well as the arm 35 and the lever is provided with several pivot holes as shown. When the pins 38 and 39 are placed as shown it is obvious that as the lever arm from 36 to 39 is about twice as long as the arm 35 the latter will have the length of its swinging movement about doubled, and this ratio may be reduced by placing the link more or less toward the position 37^a, and the ratio may be increased by placing the link in the position 37^b, and still more so if placed as 37^c.

In Fig. 7 the link in Fig. 6 is dispensed with and the arm 35 is given a slot 40, in which (as shown in Fig. 9) a shouldered stud 41 is adjustably secured by a washer 42 and thumb nut 43. Said stud 41 engages in a slot 44 in the hand lever 17^b. By this arrangement, if the stud be moved ever so far toward the swinging end of the arm 35 the stroke of the arm will still be greater than in the direct acting lever in Figs. 1 and 5, and if the stud be moved toward the end of the arm journaled on the standard the stroke of the arm will increase, as is evident from the fact that by such movement the stud may be brought close to that standard while it can never be brought in a similar relation to the pivot 36, but only moves on the hand lever a comparatively small fraction of the length of the same.

In Fig. 8 the speed changing mechanism is perhaps of the greatest efficiency and variableness. In this modification the rotating frame is given an extra member 45, to which is pivoted at 46 a lever 47 provided

with a series of pivot holes as shown, either of which may receive a pivot pin 48 of a link 49, or the pivot 50 of a link 51; the other end of link 49 is provided with a pivot pin 52, which is movable to any of the holes 53 in the hand lever 17^c, which in this instance is fulcrumed on the standard 6. The other link, 51, may have its working end pivoted at either 54 or 55 to the arm 35. In this modification it will be seen that 47 is a secondary lever by which the stroke of the arm 35 may be increased by moving the short link toward the fulcrum 46, and less increased if said link be moved to the left or the long link to the right, or both; and if an extra short movement of arm 35 be desired the short link should be moved to holes 56—57 and the long link to 54 or 55 and the other end of it to 48 or 58. The latter arrangement of the links will enable any child or patient able to sit up and make any manual effort at all, to operate the device at such speed as may be best suited to their condition. The arrangement is also desirable for persons wishing to practice for a longer time preparatory to rowing, without being swung around at a great speed while so doing.

What I claim is:—

A merry-go-round, comprising a standard, a frame mounted to rotate thereon, a series of seats arranged in peripheric order upon the frame, a ratchet wheel fixed on the standard, radial arms journaled with one end on the standard near the ratchet wheel, a dog or pawl carried by each arm and arranged to engage the teeth of the ratchet wheel, a horizontally swinging hand lever mounted on the frame and operatively connected with each of said arms and extending each in front of one of the seats, means near each seat for supporting, guiding and limiting the stroke of the lever; and means for changing the stroke of the arms without changing the stroke of the levers, said changing means forming the connection between each hand lever and the arm operated thereby.

In testimony whereof I affix my signature, in presence of two witnesses.

DONALD STEWART.

Witnesses:

W. B. CLEMENT,
M. A. ROOT.