No. 654,154. Patented July 24, 1900.

J. W. HILE.

MERRY-GO-ROUND.

(Application filed Feb. 10, 1900.)

(No Model.)

Fig. 1.

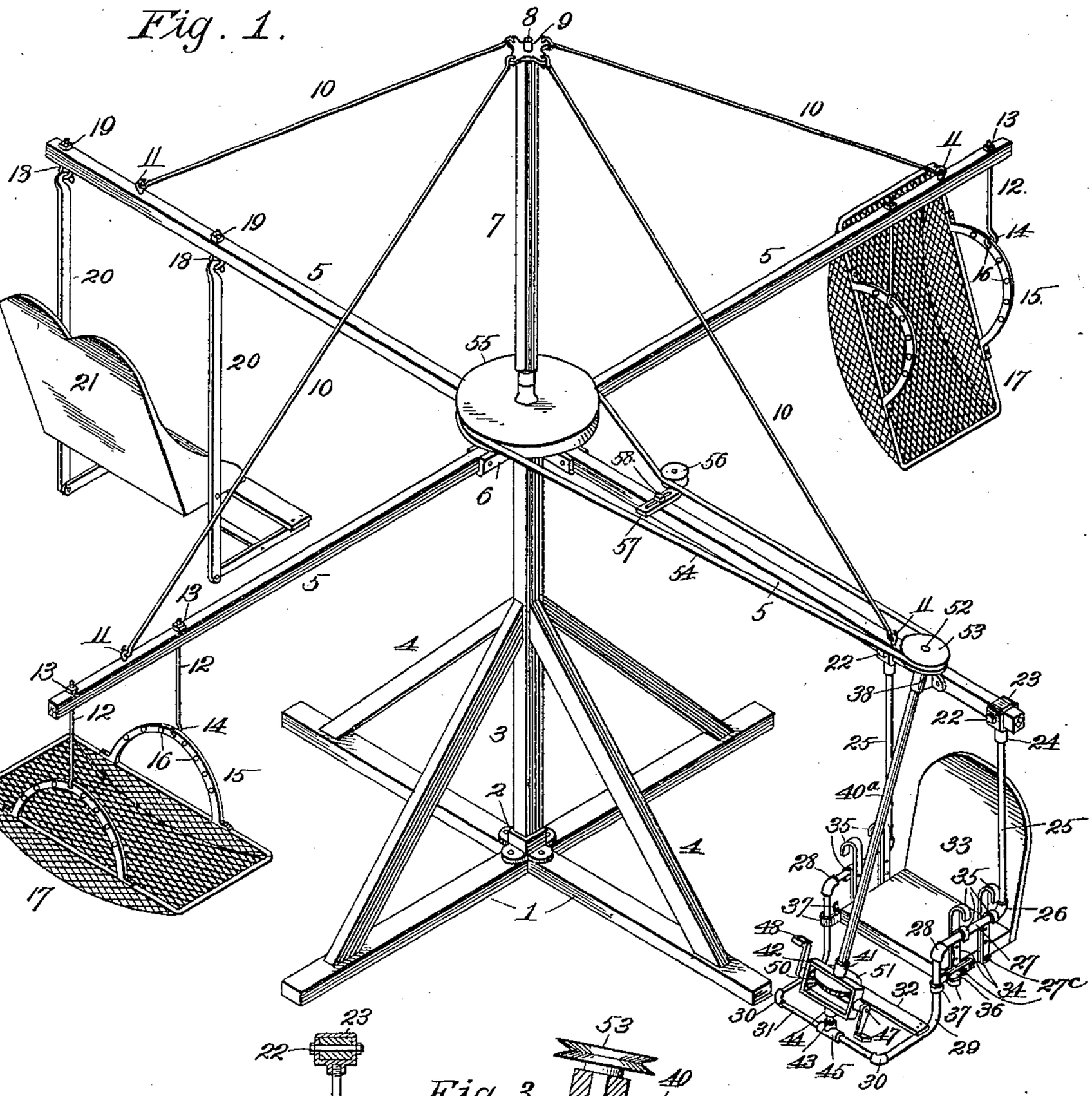

Fig. 2.

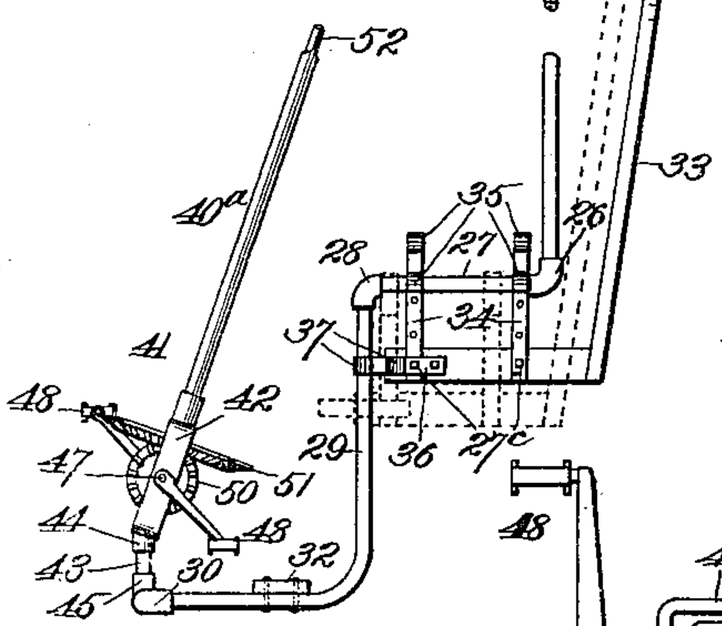

Fig. 3.

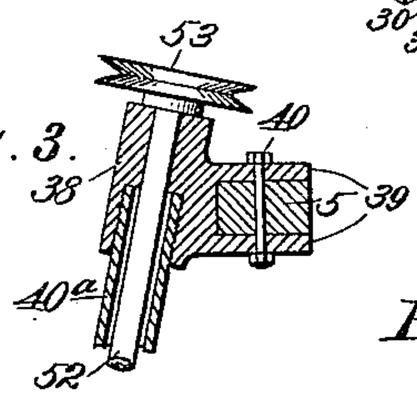

Fig. 4.

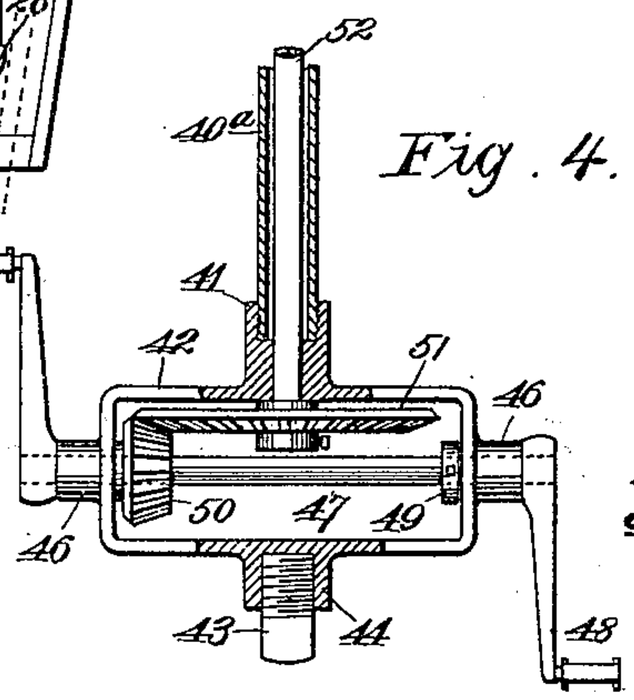

Fig. 5.

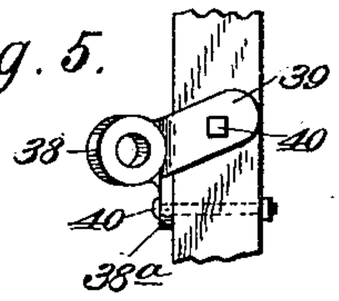

Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN W. HILE, OF KANSAS CITY, KANSAS.

MERRY-GO-ROUND.

SPECIFICATION forming part of Letters Patent No. 654,154, dated July 24, 1900.

Application filed February 10, 1900. Serial No. 4,731. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HILE, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented a new and useful Merry-Go-Round, of which the following is a specification.

My invention relates to merry-go-rounds, and more particularly to what may be termed "domestic carousels"—viz., that class adapted to be operated by a person in one of the chairs or carriages—my primary object in this connection being to provide a foot-power machine as an improvement over the hand-power machine on which Patent No. 639,386 was issued to me December 19, 1899.

A further object is to provide a chair or carriage adjustable both vertically and horizontally, so that persons of different sizes may be conveniently accommodated therein.

Other objects of the invention will be pointed out in the appended claims, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a perspective view of a merry-go-round or carousel embodying my invention. Fig. 2 is a detail side view of the adjustable chair or carriage provided with foot-power mechanism. Fig. 3 is an enlarged detail section of the upper bearing for the shaft connected to the foot-power shaft and the tube connecting said bearing rigidly with the frame forming the lower bearing of said shaft. Fig. 4 is a view, partly in front elevation and partly in vertical section, of the frame forming the lower bearing of said shaft and of the shaft connecting the pedal-shaft with the upper bearing. Fig. 5 is a top plan view of the bearing shown in Fig. 3. Fig. 6 is a modified form of hook whereby the adjustment of the chair or carriage is effected.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring to the accompanying drawings, 1 designates crossed beams which are designed to rest flat upon the ground or the floor of a building to form a base for the device. Located at the point of intersection of the crossed beams is a step-bracket 2, in which is seated an upright mast 3, and the latter is braced by means of a series of inclined braces 4, which rest upon the respective cross-beams. Extending radially from the upper end of the mast 3 is a plurality of radial arms 5, which have their inner ends seated in a box 6, and thereby held in fixed relation with one another. Located above the radial arms and supported in such position by mechanism particularly described and claimed in the above-mentioned patent, to which reference is herewith made for a complete understanding of the arrangement, is a topmast 7, having a central pin 8 at its upper end, upon which is swiveled the perforated plate 9, said plate being connected by the inclined tie-rods 10, radiating therefrom to the eyebolts 11, secured to the radial arms 5 near their outer ends, (see Fig. 1,) the arrangement being such that said arms, plate, and connecting brace-rods revolve together. Pendent from the opposite ends of one of the arms 5 are vertical rods 12, secured, preferably, by taps 13 at their upper ends and terminating in hooks 14 at their lower ends, which engage one set or another of the perforations 16 in the segmental bars 15, secured to opposite sides of carriages 17, each carriage being in the form of a short hammock, with its body of canvas or equivalent material, in order that when adjusted to the tilted position (shown in Fig. 1) it will sag and form a convenient and accommodating seat for the person therein, as will be readily understood. A pair of eyebolts 18 are pendently secured from and near one end of the other arm 5 by taps 19, and hooked reliably to said eyebolts are the pendent bars 20, carrying a seat 21 of any desired capacity. Secured upon the opposite end of said arm by means of the transverse bolts 22 are rectangular sleeves 23, provided with pendent bosses 24, in which are screwed the upper ends of pipes 25. Said pipes may be bent at their lower ends to form the arms 27 or may be connected to said arms by elbows 26, as shown, and said arms 27 project forward and have their front ends connected by the elbows 28 to the upright portions of the angle-arms 29, the forwardly-projecting portions of said arms being connected by elbows 30 to the horizontal pipe 31, and in order that this frame may be perfectly stiff and rigid angle-arms 29 are also connected and braced by the foot-bars 32,

upon which the operator's foot may rest when not engaged in propelling the machine, as hereinafter explained.

33 designates a chair of any suitable style and provided at each side with the upwardly-projecting bars 34, said bars being each formed with a pair of hook-terminals 35. The lower hook-terminals of said bars are adapted to hook over the arms 27 of the rigid frame above described when a tall person occupies the chair in order to maintain the chair in a position most remote from the foot-bar 32 and the pedals, to be hereinafter described. When a short person or child occupies this seat, the upper hook-terminals 35 are adapted to engage said arms 27 to cause the seat to approach nearer to the foot-bar 33 and the pedal mechanism to accommodate the shorter limbs of the occupant.

The elbows 26 of pipes 25 of the frame obviously limit the adjustable movement of the chair rearward from the foot-bar, while the elbows 28 form a stop or shoulder to limit the forward movement of said chair upon said pipe, as shown clearly in Fig. 2, where the chair occupies its most advanced position in dotted lines. To hold the chair more reliably upon said frame and to prevent it from tilting and from backward movement, the horizontal forwardly-projecting bars 36 are secured to its sides and are provided, like bars 34, with a pair of hook-terminals 37. When the front or outer hook-terminals engage the vertical portions of angle-arms 29, the chair occupies its most remote position from the foot-bar 32 as far as adjustment in a horizontal plane is concerned, and therefore accommodates the larger class of occupants. When the rear or inner hooks engage said arms, the chair occupies its most advanced position, and assuming that the upper hook-terminals 35 at the same time engage arms 27 (see dotted lines, Fig. 2) it will be obvious that the chair is adjusted to accommodate the smaller class of occupants. In lieu of these double hook-terminal bars 34 and 36 I also employ adjustable hooks 27^a, (see Fig. 6,) these hooks being provided with longitudinal slots 27^b, through which the clamping-bolts 27^c (see Figs. 1 and 2) will extend into the chair to clamp the hooks at the desired point of adjustment.

38 designates a bearing-sleeve arranged at one side of arm 5 centrally of and above the chair 33 and extending downward and forward in the direction of the center of pipe 31. (See Fig. 1 most clearly.) Said sleeve in order to be secured to said arm rigidly and reliably is provided with the laterally-projecting lug 38^a, bearing against the contiguous side of the arm, and the rearwardly-projecting parallel lugs 39, embracing the upper and lower sides of the bar, said lugs 38^a and 39 being secured reliably by means of the bolts 40, extending through the bar at right angles to each other. (See Fig. 5.) 40 designates a tube screwed at its upper end into bearing 38 and at its lower end into a threaded boss 41, projecting from the pedal-shaft arm 42, and said arm is supported reliably and rigidly in position with the assistance of said tube and bearing 38 by means of the short pipe 43, screwed at its upper end into the depending boss 44 of said frame and at its lower end into the inverted-T coupling 45 upon pipe 31, which pipe obviously may be made in sections connected by said coupling. Arranged horizontally of and extending through and journaled in bosses 46 at the ends of said frame is a pedal crank-shaft 47, carrying pedals 48 of any preferred construction, which pedals are obviously within convenient reach of the occupant of chair 33. The pedal-shaft is prevented from moving longitudinally by the collar 49 at the inner side of the frame near one end and by a bevel-pinion 50 near the opposite end of the frame, said pinion meshing with a large bevel-wheel 51 upon the lower end of shaft 52, extending through tube 40^a and journaled at its opposite ends in the boss 41 of said frame and in the bearing 38. (See Figs. 3 and 4.) Upon the upper end of said shaft is a gear-wheel 53, preferably in the form of a grooved belt-wheel, and an endless belt or cable 54 connects said wheel with the large groove-wheel 55, which is fixed or stationary, just as the corresponding wheel 23 of my previous patent.

A device for tensioning the belt or cable consists of the idler 56, mounted upon the slotted arm 57, adjustably mounted upon the set-screw 58, and adapted to be secured by the latter at the desired point in the usual manner. If desired, the grooved wheels 53 and 55 and belt 54 may be replaced by sprocket-wheels and chain; but such change, of course, would not involve invention, and, furthermore, is shown in my aforesaid patent.

In practice assuming that the parts are as shown in Fig. 1, the occupant of chair 33 places his feet upon the pedals and revolves the crank-shaft, which through the medium of the gearing described causes radial arms 5 and their connected parts to travel around with the center of wheel 55 as the axis of revolution, said wheel traveling upon the track formed by the endless belt or cable, or, in other words, forming a fulcrum for said belt or cable to cause the same through the medium of wheel 53 to effect a lateral pull upon the contiguous end of the arm, forming the support for said wheel, and thereby cause said arms to revolve, as and in the manner clearly explained in the patent to which frequent reference has been made. As in said patent, the chair or carriage diametrically opposite the chair in which the operator is seated may be of double capacity, so as to compensate for the weight of the mechanism at the opposite side and insure a perfect balance.

From the above description it will be apparent that I have produced a merry-go-round or carousel embodying the features of advantage enumerated as desirable in the state-

ment of invention and which may be operated with much greater convenience and ease than the construction embodied in the patent over which this is designed particularly as an improvement. It is to be understood also that such changes as do not involve a departure from the spirit and scope of the appended claims I reserve the right to make.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a merry-go-round, the combination with a rotatable frame, of a frame depending rigidly therefrom, and embodying substantially-horizontal arms, and substantially-vertical arms, driving mechanism carried by said depending frame and geared to the rotatable frame, pedals for operating said driving mechanism, and a chair or carriage provided with vertical hooks engaging said substantially-horizontal arms, and horizontal hooks for engagement with said substantially-vertical arms, substantially as described.

2. In a merry-go-round the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, and a chair provided with substantially-vertical side bars, each provided with a plurality of hooks occupying different vertical planes, and adapted to engage said side arms, substantially as described.

3. In a merry-go-round, the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, angle-arms coupled to and depending from the front ends of said side arms, and a chair provided with substantially-vertical side bars having hooks engaging said side arms and adjustable forwardly until the most advanced hooks abut against said couplings, and with forwardly-projecting bars hooked to the upright portions of said angle-arms, substantially as described.

4. In a merry-go-round, the combination with a rotatable frame, of a frame depending therefrom and embodying parallel approximately-horizontal side arms, angle-arms coupled to and depending from the front ends of said side arms, and a chair provided with substantially-vertical side bars, having hooks engaging said side arms and adjustable forwardly until the most advanced hooks abut against said couplings, and provided with forwardly-projecting bars having a plurality of hooks one set or the other of which is adapted to engage the upright portions of said angle-arms, substantially as described.

5. In a merry-go-round, the combination of a rotatable chair or carriage-carrying frame, a frame rigidly carried by and depending from said rotatable frame, a bearing-frame secured to the lower front end of said rigid frame, a bearing secured to the rotatable frame above said bearing-frame, an inclined tube rigidly connecting said bearing and bearing-frame, a shaft extending through said tube and journaled in said bearing and bearing-frame, and provided at its upper end with a wheel, and at its lower end within the bearing-frame with a bevel gear-wheel, a pedal crank-shaft journaled in said bearing-frame, a bevel gear-pinion mounted thereon and meshing with said bevel gear-wheel, a wheel mounted rigidly with its axis coinciding with that of the rotatable frame, and a traveling belt connecting said wheel with the wheel upon the upper end of the shaft extending through the inclined tube, substantially as and for the purpose described.

6. In a merry-go-round, the combination with a rotatable frame, chairs or carriages suspended therefrom, a frame rigidly carried by and depending from said rotatable frame, and embodying substantially-horizontal side arms, a foot-bar below and forward of the side arms, a chair adjustable upon said side arms toward or from said foot-bar, a bearing-frame secured to the lower front end of said rigid frame, a bearing secured to the rotatable frame above said bearing-frame, an inclined tube rigidly connecting said bearing and bearing-frame, a shaft extending through said tube and journaled in said bearing and bearing-frame, and provided at its upper end with a wheel, and at its lower end within the bearing-frame with a bevel gear-wheel, a pedal crank-shaft journaled in said bearing-frame, a bevel gear-pinion mounted thereon and meshing with said bevel gear-wheel, a wheel mounted rigidly with its axis coinciding with that of the rotatable frame, and a traveling belt connecting said wheel with the wheel upon the upper end of the shaft extending through the inclined tube, substantially as described.

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

JOHN W. HILE.

Witnesses:
H. C. RODGERS,
G. Y. THORPE.