

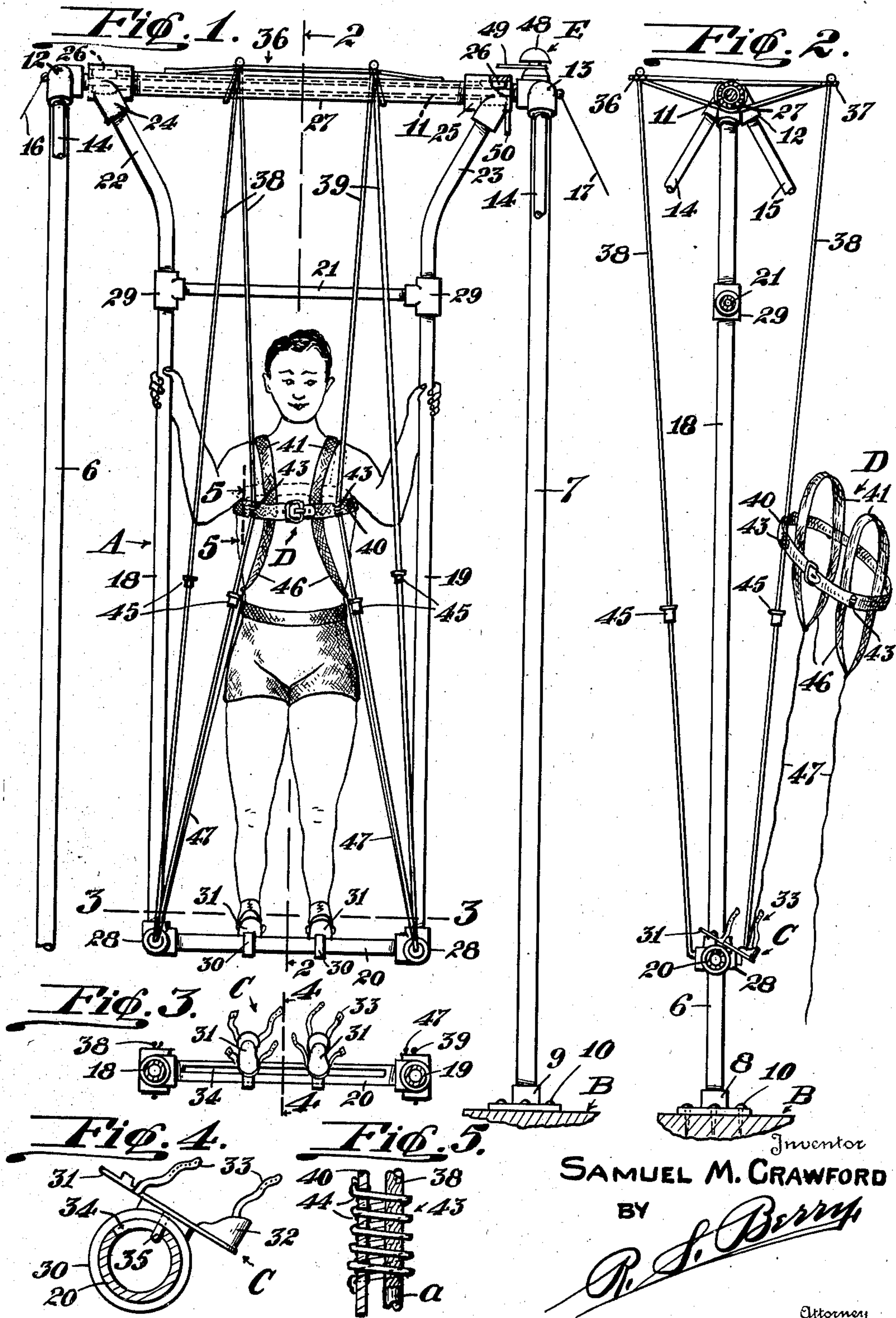
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SWING

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SWING

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This invention relates to a swing and has as its primary object the provision of a swing which may be swung completely around a horizontal axis.

Another object is to provide safety means in a swing of the above character whereby the occupant may be securely held in the swing in a fashion to preclude falling therefrom in event of losing his grip or control of the swing, thereby reducing the possibility of accident to the operator to a minimum.

Another object is to provide a means for enabling the occupant of the swing to stand upright therein while effecting operation of the swing in traversing a loop around a horizontal axis, and yet permit such freedom of movement of the occupant relative to the swing as is necessary to effect operation thereof as in pumping, this means being arranged in such a manner that it will co-operate with the aforementioned safety means in order to prevent the operator of the swing from falling.

Another object is to provide a means for fastening the feet of the occupant in a fashion to insure his retaining a foot hold on the swing and facilitate maintaining a standing position on the swing.

A further object is to provide a construction whereby the swing structure may be readily assembled in most part from lengths of metallic pipe and conventional pipe couplings.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear the invention is carried into effect as illustrated by way of example in the accompanying drawing in which:

Fig. 1 is a view of the swing as seen in front elevation depicting the manner in which an operator may ride the swing in a standing position.

Fig. 2 is a view of the swing as seen in vertical section on the line 2—2 of Fig. 1.

Fig. 3 is a plan view in horizontal section taken on the line 3—3 of Fig. 1.

Fig. 4 is a detail in cross section and elevation as seen on the line 4—4 of Fig. 3 illustrating the foot fastener.

Fig. 5 is a detail in section and elevation taken on the line 5—5 of Fig. 1 showing the manner of effecting a sliding connection between a supporting harness worn by the operator and a safety cable for aiding the operator to maintain a standing position in the swing and also to hold the occupant against falling from the swing in event of being placed out of control.

Referring to the drawing more specifically in

which corresponding reference characters indicate corresponding parts throughout the several views, A designates generally a swing structure and 6 and 7 designate a pair of spaced parallel standards for supporting the swing structure A. The standards are here shown as embodying lengths of pipe screwed into foot sockets 8 and 9 resting on a suitable support B, such as a floor, and affixed thereto as by screws 10. The standards are connected together at their upper ends by a solid bar 11 of circular cross section, which bar is screwed at its ends into coupling members 12 and 13 threaded on the upper ends of the standards 6 and 7.

The standards may be braced in any suitable fashion to maintain them in their upright position, being here shown as braced from front to rear in the direction of movement of the swing A by inclined struts 14 and 15 leading obliquely downward from the upper ends of the standards; the lower ends of the struts being secured in any suitable fashion as is common in bracing of this character.

The struts 14 and 15 are here shown as comprising metallic pipe and as having their upper ends screwed into Y branches formed on the couplings 12 and 13. The standards may be further braced laterally by guy wires 16 and 17 in a conventional fashion.

The swing structure A embodies a pair of spaced rigid side members 18 and 19 connected together at their lower ends by a cross bar 20 and intermediate their end by a tie bar 21. The upper end portions of the side members 18 and 19 extending above the tie bar 21 diverge outwardly as indicated at 22 and 23, and connect with a pair of sleeves 24 and 25 which encircle the bar 11 in pivotal relation thereto. Roller bearings 26 are interposed between the sleeves and the bar to reduce friction.

The sleeves 24 and 25 are connected together by a tube 27 which encircles the bar 11.

The swing side members 18 and 19, cross pieces 20 and 21, and tube 27, are formed of lengths of pipe and are interconnected by conventional pipe couplings; four way couplings 28 being employed in connecting the lower ends of the side bars 18 and 19 to the cross bar 20; T couplings 29 connecting the ends of the tie bar 21 with the side bars 18 and 19, and the sleeves 24 and 25 comprising Y-couplings serving to interconnect the tube 27 with the side bars 18 and 19.

The swing structure A thus formed and mounted is capable of being rotated vertically completely around the horizontal axis of the pivotal

support afforded by the sleeves 24 and 25 and their bearings on the cross bar 11.

Mounted on the cross bar 20 are foot supports C each of which embodies a sleeve 30 slidably encircling the bar 20 for longitudinal adjustment thereon and rotative movement relative thereto, and on which sleeve is mounted a plate 31 having a heel engaging socket 32 and fitted with straps 33 for fastening the shoe or foot of an operator on the plate 31. The bar 20 is formed with a longitudinally extending slot 34 and mounted on the sleeve 30 is a pin 35 which extends into the slot 34 for limiting turning of the sleeve 30 circumferentially of the bar 20. The slot 34 has a width exceeding the diameter of the pin 35 so as to permit limited turning movement of the sleeve 30 on the bar 20.

Carried by the tube 27 and extending from opposite sides thereof is a pair of brackets 36 and 37 and extending downwardly from each of the brackets is a pair of flexible cables 38 and 39 leading to the lower end of the swing and here shown as connected to the couplings 28. The cables 38 and 39 may be of any suitable construction being preferably formed of twisted wire strands and covered with a protective sheath *a* as indicated in Fig. 5. The cables are arranged to lead at an inward inclination from the upper toward the lower end portion of the swing structure A, with the cables of each pair diverging sidewise of the swing structure and outwardly relative to each other from their intersection with the bracket at their upper ends to their connection with the swing at their lower ends. The cables 38 and 39 are designed to be slidably connected to a safety belt worn by an operator as will presently be described. Where the swing is to be used by two occupants each pair of the cables is utilized in connection with a safety belt D worn by each occupant as a means for aiding in maintaining the occupant in an upright or standing position in the swing, but where the swing is to be occupied by a single operator only one pair of the cables is utilized.

The safety belt D may be of any suitable construction being here shown as comprising a strap 40 adapted to encircle the chest of the operator as shown in Fig. 1; shoulder straps 41 connecting with the strap 40 to aid in holding the latter in place.

The slidable connection afforded between the safety belt D and a pair of the cables 38 and 39 is here shown as embodying a pair of tubes 43 formed of coiled wire passed through eyelets 44 in the band 40, and through which tubes the cables are extended as particularly shown in Fig. 5.

The tubes 43 are so arranged on the strap 40 that when the strap is applied to the operator the tubes will be positioned a distance apart less than the distance between the intermediate portions of the cables 38 and 39. By this arrangement when the cables are attached to the belt and the latter applied to the person of the operator, a slack will be taken up in the cable and the intermediate portions of the latter brought inwardly toward each other so that the lower portions of the cables will diverge from their point of connection with the belt at an outward inclination relative thereto such as to yieldably oppose downward movement of the belt on the cables.

Formed on the cables 38 and 39 intermediate the ends thereof are stops 45 which serve to limit downward movement of the belt and of the operator on the cables 38—39; the stops being spaced

a short distance below the normal point of engagement of the cables with the belt D so as to permit movement of the operator from a standing to a stooping position as is employed by the operator in effecting pumping of the swing; the stops however being spaced a sufficient distance from the lower end bar 20 of the swing as to serve in co-operation with the safety belt D to hold the operator in a partially erect position on the swing in event he loses his grip thereon.

The belt D is fitted with side straps 46 connecting with cables 47 leading to the lower end of the swing at the couplings 28 so as to act with the belt and shoulder straps as a harness to support the operator in a head down position and thus relieve the foot fastenings and the feet of this load.

In operation an operator is positioned in the swing with his feet fastened on the foot supports C by straps 33; the foot supports being shifted longitudinally of the bar 20 to a desired position to afford comfort of the operator or accommodate another occupant. The safety belt D is applied to the pair of cables 38 and 39 and fitted in place on the operator, as shown in Fig. 1. The swing is set in motion in the usual manner as by an attendant, whereupon the occupant pumps the swing to increase its arc of travel. The swing being rigid throughout and the operator being securely held therein the swing may be actuated to move upwardly past the horizontal and on sufficient impetus being imparted thereto may be caused to swing a complete revolution around its horizontal axis. As a means for indicating movement of the swing throughout a loop an indicator E is provided preferably comprising a bell 48 fitted with a lever 49 extending above the sleeve 25 and arranged in the path of travel of a finger 50 on the sleeve 25 projecting in the direction of the length of the swing so that as the swing advances over the top portion of a loop the finger 50 will strike the lever 49 and ring the bell 48.

When two persons are to occupy the swing in the standing position, a second pair of the foot supports C is provided and positioned on the bar 20 to extend in a direction opposite that shown in the drawing. The second occupant is also equipped with a safety belt D, connecting with the pair of cables 38 and 39 opposite those employed by the other occupant.

It will be observed that by the construction here set forth the safety belt D will afford a fastening between the upper portion of the operator and the swing structure, that the lower extremities of the operator may be fastened to the lower end cross bar of the swing, and that each of said fastenings while securely holding the operator against falling from the swing will permit sufficient freedom of movement to enable the operator to rock the swing in the customary manner; the sliding connection between the belt and the cables permitting up and down movement of the body of the operator and the cables by their flexibility permitting back and forth movement of the operator relative to the swing and also co-operating with the safety belt in order to prevent the operator from falling, while the pivotal mounting of the supports C permits of a limited locking movement of the feet of the operator relative to the cross bar 20.

While I have shown and described a specific embodiment of the invention it is manifest that it is subject to being carried into effect other than as specifically recited, and accordingly I do not limit myself to the exact details of construc-

tion shown but may employ such changes and modifications in the parts and their arrangement as come within the meaning and scope of the appended claims.

5 I claim:

1. In a swing, a swing structure, a support therefor, a pair of cables carried by said swing structure extending lengthwise thereof, a safety belt, and means slidably connecting said belt to
10 said cables, said cables being downwardly divergent relative to each other and sidewise of the swing structure so as to yieldably resist downward movement of said belt thereon.

2. In a swing, a swing structure, a support
15 therefor, a pair of cables carried by said swing structure extending lengthwise thereof, a safety belt, and means slidably connecting said belt to said cables, said cables being downwardly divergent relative to each other and sidewise of the
20 swing structure so as to yieldably resist downward movement of said belt thereon, and means for limiting downward movement of said belt on said cables.

3. In a swing, a rigid swing structure, means
25 for supporting said swing structure to rotate completely around a horizontal axis, a pair of cables carried by said swing structure and extending lengthwise and diverging downwardly and sidewise thereof, and a safety belt engaged
30 by said cables and slidable longitudinally thereof.

4. In a swing, a rigid swing structure, means
35 for supporting said swing structure to rotate completely around a horizontal axis, a pair of cables carried by said swing structure and extending lengthwise and diverging downwardly and sidewise thereof, and a safety belt engaged
by said cables and slidable longitudinally thereof, and means on said cables for limiting downward movement of said belt on the cables.

40 5. In a swing, a rigid swing structure, means for supporting said swing structure to rotate completely around a horizontal axis, a pair of cables carried by said swing structure and ex-

tending lengthwise and diverging downwardly and sidewise thereof, a safety belt engaged by said cables and slidable longitudinally thereof, a horizontal cross bar forming the lower end of
5 said swing structure, and means on said bar for fastening the occupant of the swing thereto.

6. In a swing, a horizontal bar, a support therefor, a swing pivotally supported on said bar for a complete revolution therearound, said
10 swing embodying rigid side members and an end cross bar, a pair of cables extending longitudinally and diverging downwardly and sidewise of said swing and carried thereby, means on said
cables for engaging the upper portion of an occupant of the swing, and means on said cross
15 bar for engaging the lower extremities of the occupant of the swing.

7. In a swing, a horizontal bar, means for supporting the ends of said bar, a tube encircling
20 said bar, sleeves engaging the end of said tube encompassing said bar and revolvably bearing thereon, rigid swing side members connected to said sleeves, a cross bar connecting the lower ends of said swing side members, a pair of cables connected at their upper ends relative to said tube
25 and at their lower ends relative to said cross bar so that the cables diverge downwardly relative to each other and sidewise of the swing, and a safety belt slidably engaged by said cable.

8. In a swing, a horizontal cross bar formed
30 with a longitudinally extending slot, a sleeve encircling said bar, a foot support on said sleeve and a pin on said sleeve extending into said slot.

9. In a swing, a horizontal cross bar formed
35 with a longitudinally extending slot, a sleeve encircling said bar, a foot support on said sleeve and a pin on said sleeve extending into said slot, said slot having a transverse width exceeding the diameter of the pin so as to permit a
40 limited movement of said sleeve circumferentially of the bar.

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