Oct. 6, 1925. 1,555,981

J. B. JOHNSON

AMUSEMENT DEVICE

Filed May 16, 1922 2 Sheets-Sheet 1

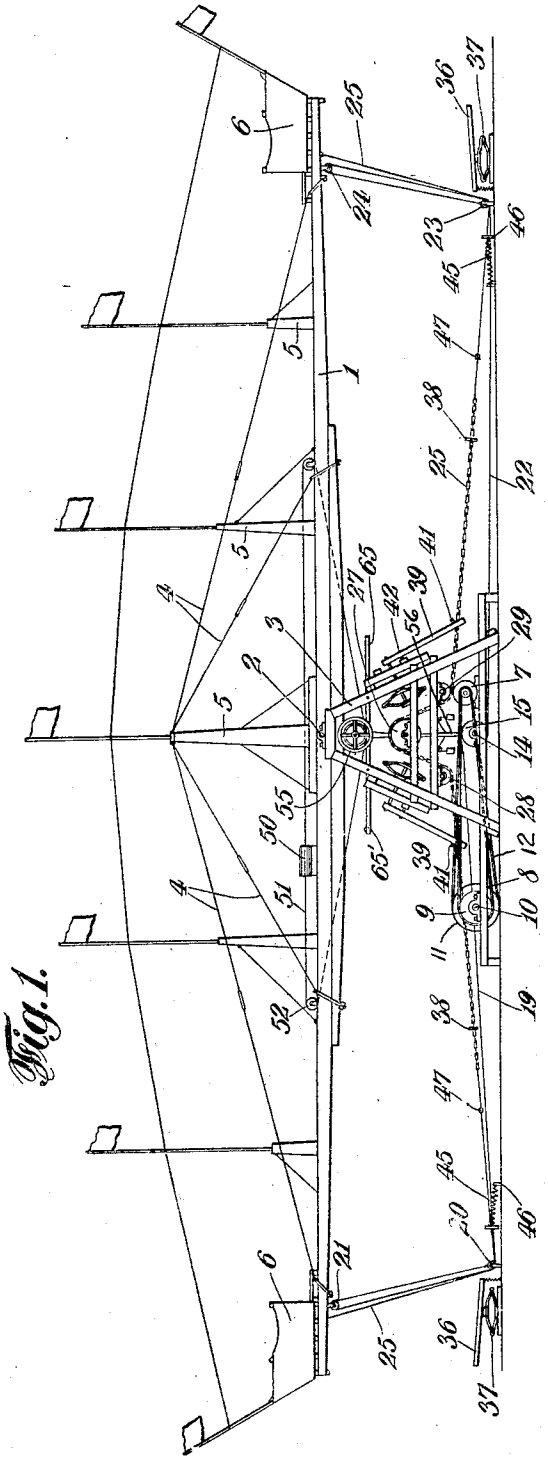

Fig. 1.

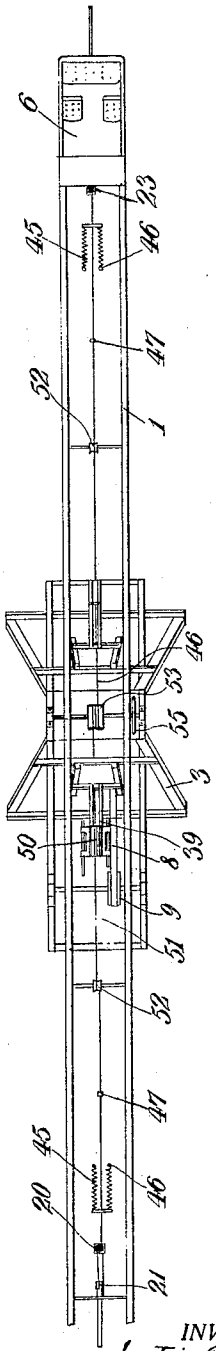

Fig. 2.

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2 Sheets-Sheet 2

Fig. 3.

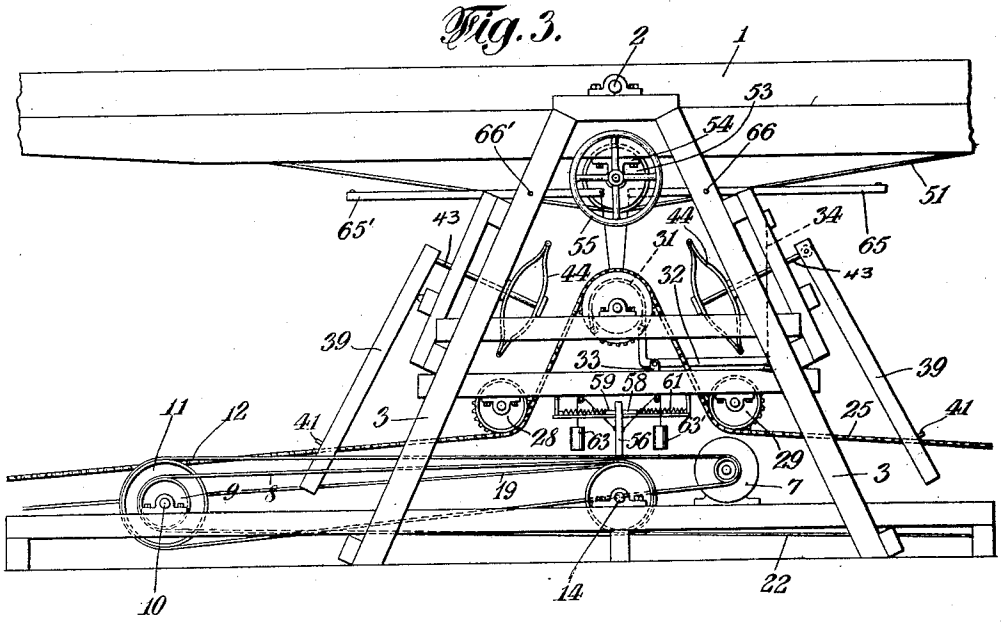


Fig. 4.

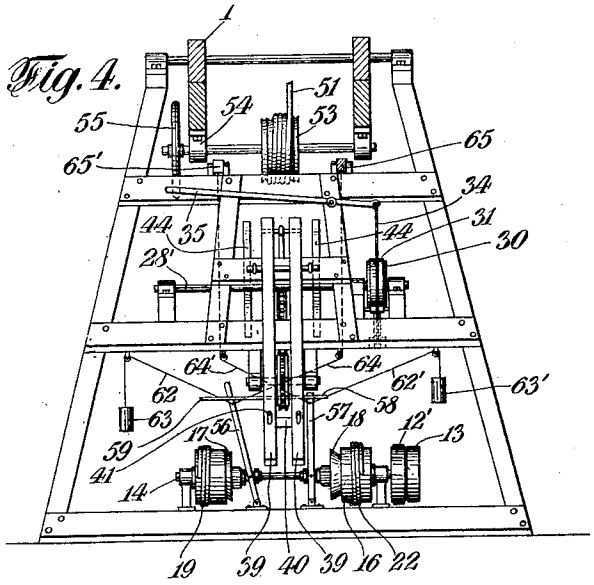
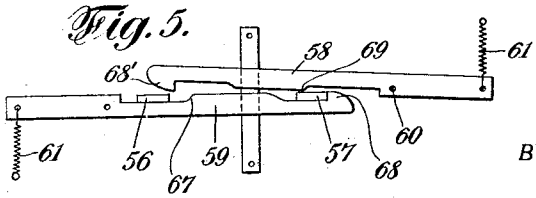


Fig. 5.



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UNITED STATES PATENT OFFICE.

JUSTIN B. JOHNSON, OF NAHANT, MASSACHUSETTS.

AMUSEMENT DEVICE.

Application filed May 16, 1922. Serial No. 561,284.

To all whom it may concern:

Be it known that I, JUSTIN B. JOHNSON, a citizen of the United States of America, and a resident of Nahant, Essex County, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

My invention relates to amusement devices, and particularly to power operated see-saws or tilts. It is desirable in amusement devices of this type that the speed of operation shall be rapid enough to please the patrons but that operation under those conditions shall be positive and safe. It is an object, therefore, of my invention to provide a see-saw having power driven operating mechanism which may with perfect safety be operated at a sufficiently high speed. For a complete understanding of the see-saw controlling mechanism whereby I obtained the desired objects, recourse may be had to the following description taken in connection with the accompanying drawings in which—

Fig. 1 is a side view of a see-saw and its operating mechanism embodying my invention.

Fig. 2 is a plan view of the construction shown in Fig. 1.

Fig. 3 is an enlarged side view of portions of the operating mechanism.

Fig. 4 is an end view of the operating mechanism parts being shown in section.

Fig. 5 is a detailed view.

For the purpose of disclosing the advantages and objects of my invention and the means for the attainment thereof, I have shown one embodiment in the drawings in which the main member or beam 1 is pivoted at 2 in bearings carried by a frame 3 which may rest upon the ground or any suitable base. The beam may be reinforced in any manner as by rods 4 and structs 5 and carries at its ends passenger compartments 6. My construction is primarily intended to be operated by a uni-directional source of power, for example a gas engine or an electric motor 7 diagrammatically indicated. Various arrangements for speed reduction may be employed, for example a belt 8 drives pulley 9 on shaft 10 which carries a pulley 11 driving a belt 12 which cooperates with the loose pulley 12′ and the tight pulley 13 which drives the shaft 14. Free on the shaft are drums 15 and 16 which may be connected to the shaft 14 by clutches 17 and 18 as hereinafter described. From the drum 15 a cable 19 runs through over a sheave of the pulley 20 secured in the ground, over the pulley 21 secured to one end of the main member 1 and back to the pulley 20. A cable 22 on the drum 16 runs to the other end of the main member 1 in a similar manner over sheaves of the pulleys 23 and 24. A cable 25 runs from one end of the main member 1 to the other over sheaves of the pulleys 20 and 23 attached to the ground and over the wheels 27, 28 and 29 mounted in the frame 3. The center portion of this cable preferably comprises the sprocket chain and the wheels 27, 28 and 29 will be sprocket wheels. The wheel 27 is secured to the shaft 28′ upon which is fixed a brake drum 30 with which the brake band 31 cooperates. Brake band 31 is operated by the lever 32 pivoted at 33 and this lever in turn is connected by a cable 34 to a hand operating lever 35.

The oscillating main member 1 and the passengers thereon will ordinarily be of considerable weight and in order to avoid throwing great strain upon the main member 1 or the power operating mechanism, it is desirable to provide means for arresting the motion of the oscillating beam in one direction before applying power to move it in the other direction. It is desirable that such arresting or snubbing shall not only stop the motion of member 1 but start it on its backward course. To this end I provide buffers 36 under each end of the beam and which include springs 37. I also provide the brake cable 25 with stops 38 which by the cooperation of the snubbing levers 39 limit the oscillation of the member 1. Levers 39 consist of two parts between which the cable or chain 25 passes and is supported by the cross members 40. The stops 38 are prevented from sliding up on the levers 39 by the pins 41. The levers 39 are pivoted at 42 and the end opposite that which co-operates with the stops 38 has a bar or cable 43 connected thereto which acts against the springs 44. Springs 45 surround the cable 25 and are anchored to the ground or base at 46 so that the stops 47 will cooperate with them to assist in the arresting of the motion

of the member 1 and starting it upon its return motion. The weight 50 is moved to balance the main member 1 by a cable 51 passing over pulleys 52 to the drum 53 carried in brackets 54 extending downwardly from the main member 1. The drum is moved by the hand wheel 55. Clutch 17 is provided with an operating lever 56 and clutch 18 is provided with an operating lever 57. These levers extend between the positioning members 58 and 59 which respectively move about pivots 60 under the action of the springs 61. To the lever 56 is attached a cable 62 upon which acts the weight 63 and another cable 64 which passes upwardly to the lever 65 pivoted in the frame at 66. To lever 57 is attached cable 62′ upon which acts the weight 63′ and another cable 64′ which leads up to the lever 65′ pivoted in the frame 3 at 66′. With the clutches in the position shown in Fig. 4, the cable 19 will be wound upon the drum 15 and the left end of the main member 1 will be drawn down until it strikes the lever 65′ whereupon the cable 64 will move the lever 56 to the right in Figs. 4 and 5 until it strikes the cam surface 67 swinging the member 59 about its pivot 60 and releasing the lever 57 from the hook 68 so that the weight 63′ will draw it to the right and engage the clutch 18 whereupon the right hand end of the main member 1 will be drawn down by the cable 22 as it is wound upon the drum 16. As soon as the member 59 has been swung about its pivot far enough to release the lever 57, the hook 68′ on the member 58 will engage and hold in place the lever 56 against the action of the weight 63 after the main member is disengaged from the lever 65. When the main member strikes the lever 65, the lever 57 will be swung to the left against the cam surface 69 releasing lever 56 to move under the action of the weight 63 whereupon the hook 68 reengages the lever 57.

From the foregoing it will be apparent that power for moving the main member is applied to it near its ends so as to reduce the forces involved and that when one end of the main member approaches the ground it will be snubbed by one or more resilient snubbing devices which take effect just after the power is cut off. The snubbing devices being resilient will start the main member on its backward oscillation by the time the power is applied to the high end of the main member 1 to draw it down. The entire operation is automatic and the brake will stop the movement of the main member when the belt 12 is shifted from the tight pulley 13 to the loose pulley 12′.

While I have described one embodiment of my invention in great detail, it is to be understood that I do not limit myself to the specific construction thus set forth for the purpose of disclosing my invention but I intend that my invention shall be defined by the hereunto appended claims.

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

1. In a device of the class described, a main member mounted for oscillation, a unidirectional source of power, power transmitting mechanism susceptible of settings wherein power is transmitted from said source to said main member to move it respectively in opposite directions, and means positively actuated by movement of said main member in one direction to set said mechanism to move said member in the opposite direction.

2. In a device of the class described, a main member mounted for oscillation, a unidirectional source of power, power transmitting mechanism susceptible of settings wherein power is transmitted from said source to said main member to move it respectively in opposite directions, and means positively actuated by movement of said main member to reverse the setting of said mechanism.

3. In a device of the class described a main member mounted for oscillation, a unidirectional source of power, means including a clutching means for transmitting power from said source to said member to oscillate it in one direction, similar means for oscillating said member in the other direction, and means operated by movement of said member for actuating both said clutching means.

4. In a device of the class described, a main member pivoted for oscillation, a cable connected to said member at points on opposite sides of its pivot, and snubbing means cooperating with said cable and limiting the extent of oscillation of said member.

5. In a device of the class described, a main member pivoted for oscillation, a cable connected to said member at points on opposite sides of its pivot, and means on both sides of said pivot and cooperating with said cable for limiting the extent of oscillation of said member in each direction.

6. In a device of the class described, a frame, a main member pivoted thereto for oscillation in a vertical plane, a cable attached to said member at points on opposite sides of its pivot, a wheel carried by said frame over which said cable moves upon oscillation of said member, and a snubber mounted on said frame for cooperation with said cable to definitely limit the extent of oscillation of said member.

7. In a device of the class described, a frame, a main member pivoted thereto for oscillation in a vertical plane, a cable attached to said member at points on opposite sides of its pivot, and snubbing means mounted on said frame for cooperating with

said cable to limit the extent of oscillation of said member in opposite directions.

8. In a device of the class described, a frame, a main member pivoted thereto for oscillation in a vertical plane, a cable attached to said member at points on opposite sides of its pivot, snubbers secured to opposite sides of said frame for respectively cooperating with said cable to limit the extent of oscillation of said member in opposite directions.

9. In a device of the class described, a frame, a main member pivoted thereto for oscillation in a vertical plane, a cable attached to said member at points on opposite sides of its pivot, main snubbers secured to opposite sides of said frame and auxiliary snubbers secured to the ground on opposite sides of said frame, a main snubber on one side of said frame and an auxiliary snubber on the opposite side of said frame jointly cooperating with said cable to limit the extent of oscillation of said member in each direction.

10. In a device of the class described, a main member pivoted for oscillation, a first cable secured to said member at each side of its pivot, means for alternately exerting a downward pull on said member on alternate sides of its pivot through said first cable, a second cable attached to said member at each side of its pivot, and means for exerting a downward pull on said member on alternate sides of its pivot through said second cable, the pull on a given side of said member by said second cable occurring substantially at the completion of the pull on the other side by said first cable and prior to the beginning of the pull on said given side by said first cable.

11. In a device of the class described, a main member pivoted for oscillation, a plurality of cables attached to said member on each side of its pivot, means for imparting a downward pull to one of said cables and means cooperating with another of said cables for limiting the upward motion of the part of said member to which it is attached.

12. In a device of the class described, a main member pivoted for oscillation, cables attached to said member respectively on opposite sides of its pivot, a unidirectional source of power, drums for said cables and clutches operated by movement of said member for alternately connecting said drums to said source of power.

13. In a device of the class described, a main member pivoted for oscillation, means for oscillating said member, a cable extending from one end of said member to the other and provided with stops, and snubbers engaging said stops to limit oscillation of said member.

14. In a device of the class described, a main member pivoted for oscillation, means for oscillating said member, a cable extending from one end of said member to the other and provided with stops, a brake drum operated by said cable and snubbers engaging said stops to limit oscillation of said member.

15. In a device of the class described, a main member pivoted for oscillation, means for applying force to said member to effect oscillation thereof, means other than said first-named means for bringing said main member to rest, and means co-ordinating the force applying means and the arresting means to bring the main member to rest after motion in one direction before the application of force to move the main member in the opposite direction.

16. In a device of the class described, a main member pivoted for oscillation, means for arresting the motion of said main member at both ends of its oscillation and starting it in the reverse direction and means for applying force to said member after it has been so started to continue its oscillation.

17. In a device of the class described, a main member pivoted for oscillation, means for applying force to said member to oscillate it in both directions and including clutches comprising members movable into and out of engagement, means for automatically moving said movable members of said clutches in one direction, means for moving said movable members in the other direction and operated by movement of said main member, and means operated by said last named means for releasing one clutch for and restraining the other clutch against automatic movement.

18. In a device of the class described a main member mounted for oscillation, a source of power for oscillating said main member, means for transmitting power from said source to said member and including a plurality of clutches and means operated by movement of said member for alternately engaging said clutches.

19. In a device of the class described, a main member mounted for oscillation, a unidirectional source of power, means adjustable to two settings whereby power is transmitted from said source to said main member respectively on opposite sides of its centre of oscillation, and means positively actuated by movement of said main member for reversing the setting of said power transmitting means.

In testimony whereof, I have signed my name to this specification.

JUSTIN B. JOHNSON.