Oct. 8, 1957 A. MEIXSELL 2,809,036

REVOLVING SEESAW

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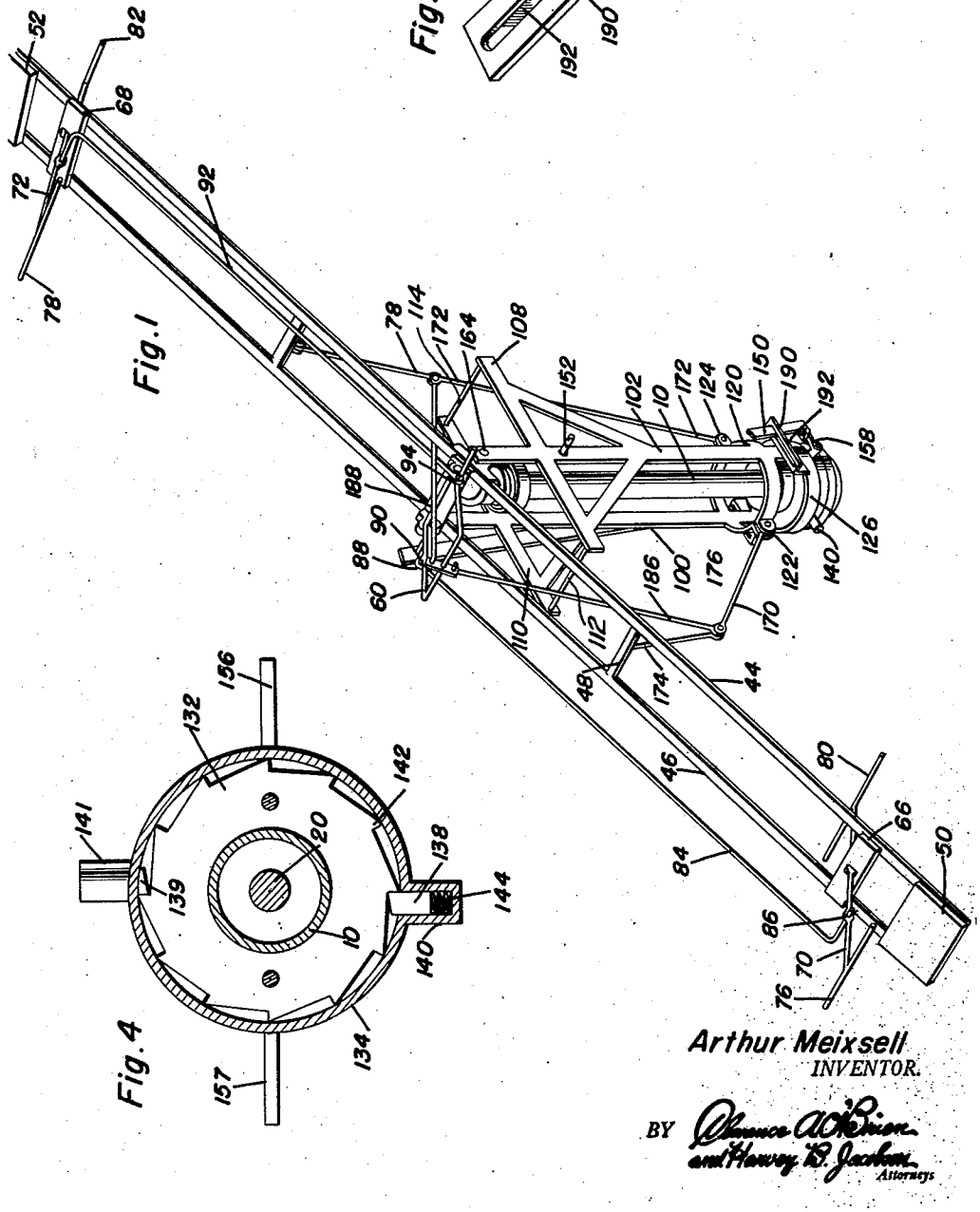


Fig. 1

Fig. 5

Fig. 4

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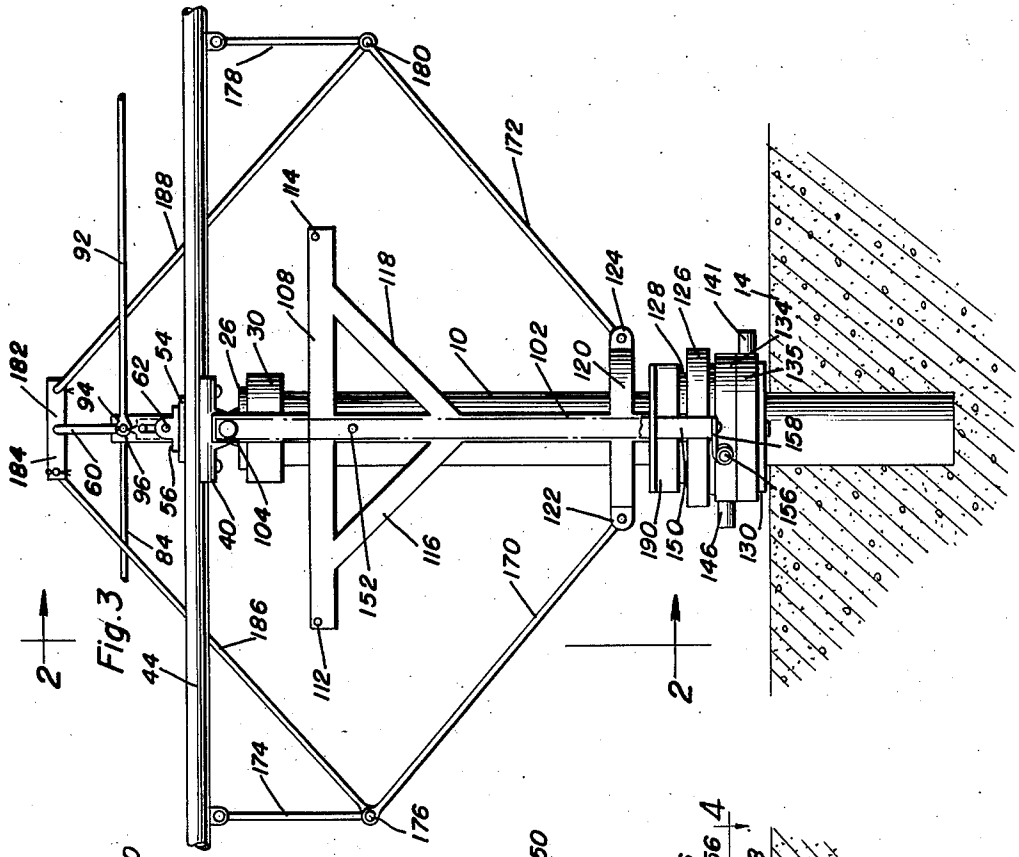


Fig. 3

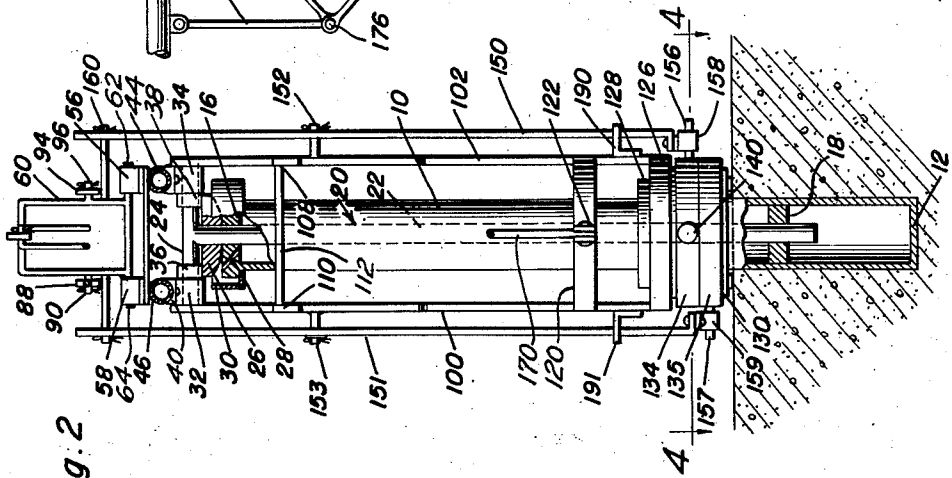


Fig. 2

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REVOLVING SEESAW

Arthur Meixsell, St. Louis, Mo.

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2 Claims. (Cl. 272—30)

This invention relates to a revolving seesaw and particularly a seesaw mounted on a fixed post and having a manual operating device to cause the oscillation of the seesaw about a horizontal axis at the top of the post and also a rotary motion about a vertical axis coaxial with the post.

In operation of seesaws, it is desirable to provide a second motion to the ordinary oscillatory motion and to provide means by which the riders of the seesaw may control the motion thereof without the end of the seat supporting structure coming into contact with the ground with the usual spine tingling shock.

According to the present invention, a seesaw is provided having a manual drive operated by the operators or riders on the seesaw and having a stop to prevent the overmotion of the seesaw so that the end of the seesaw will not come to land in contact with the ground and a ratchet mechanism mounted on the stand of the seesaw and means connected to the driving mechanism of the seesaw for causing rotary movement thereof.

It is accordingly an object of the invention to provide an improved seesaw.

It is a further object of the invention to provide a manual drive means for a seesaw.

It isa further object of the invention to provide a seesaw having a rotary motion.

It is a further object of the invention to provide a seesaw having an expansible and contractible hinge brace arrangement for driving the seesaw.

Other objects and many of the attendant advantages of the present invention will be apparent from the following detailed description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of the seesaw according to the invention;

Figure 2 is a cross-sectional view of the seesaw with parts broken away and in section, taken substantially on the plane indicated by the section line 2—2 of Figure 3;

Figure 3 is an enlarged fragmentary side elevation of the seesaw in neutral position;

Figure 4 is a horizontal cross-section through the ratchet mechanism taken substantially on the plane indicated by section line 4—4 of Figure 2; and

Figure 5 is a perspective view of a guide member for controlling the rotary arm device.

In the exemplary embodiment according to the invention, a standard 10 is provided as a substantially tubular piece having a bottom 12 therein and the entire structure being mounted in concrete or other rigid material 14. An upper guide bearing 16 is preferably rigidly secured at the top of the standard 10 and a second guide bearing 18 is provided between the first guide bearing 16 and the bottom 12 of the standard at any suitable position therein.

A T-shaft 20 is provided with an elongated shank 22 which is mounted in the bearings 16 and 18 and a T-

head 24 which extends transversely to the shank 22 and a plate-type bearing 26 is placed between the head 24 and the guide bearing 16. The guide bearing 16 is provided with a plurality of apertures 28 and an upstanding collar 30 is secured to the top of the standard 10 and extends upwardly past the guide bearing 16 and provides an oil pan for providing oil between the rocker bearing 26 and the guide bearing 16. Preferably sufficient oil is supplied so that the standard 10 is full of oil so that the guide bearings 16 and 18 will constantly be oiled and sufficient oil will be available to oil the rocker bearing 26 for reasons presently to be described.

A pair of sleeve bearings 32 and 34 are journaled on the head 24 and retained in position by means of collars 36 and 38. The sleeve bearings 32 and 34 are provided with elongated cradles 40 in which the side rails 44 and 46 of a seat supporting structure are rigidly connected.

The seat supporting structure is preferably constructed of a skeleton framework having side rails 44 and 46 provided with suitable strut members 48 that are suitably positioned therein to provide a substantial rigid framework and having seats 50 and 52 mounted thereon. Transverse cleat 54 is provided substantially intermediate the ends of the seat supporting structure and in alignment with the sleeve bearings 32 and 34. A pair of bearings 56 and 58 are mounted in spaced apart relation on the cleat 54 and preferably directly above the side rails 44 and 46. A rocking frame 60 is provided with laterally extending axles 62 and 64 which are received in the bearings 56 and 58 so that the rocking frame 60 will oscillate about the axles 62 and 64.

Transverse cleats 66 and 68 are provided adjacent the seats 50 and 52, respectively, and operating handles 70 and 72 are pivotally mounted on the cleats 66 and 68. The handles 70 and 72 are provided with handle bars 76 and 78, respectively, and also provided with foot bars 80 and 82, respectively. The handle 70 is connected to the rocking frame 60 by means of the angle link rod 84 having one end connected to an eye 86 in the handle 70 and the other end having an eye 88 journaled on a stub shaft 90 on the rocking frame 60. The handle 72 is likewise connected to the rocking frame 60 by means of an angulated link rod 92 having an eye 94 journaled on a stub shaft 96 on the rocking frame 60.

Elongated side pieces 100 and 102 are provided with apertures 104 which suspend the side members 100 and 102 on the ends of the head of the T-shaft. A pair of transverse arms 108 and 110 are provided on the vertical members 100 and 102 and provided with transverse stop arms 112 and 114 to limit the angular movement of the seat supporting structure. Braces 116 and 118 are provided to rigidify the transverse arms 108 and 110 so that they will not bend in normal operation of the seesaw.

Split collar 120 is provided substantially integral with the arms 100 and 102 and terminates in hinge members 122 and 124. The arms 100 and 102 terminate in a collar 126 which is provided with a bearing 128 on the standard 10. A bottom bearing plate 130 is fixed on the standard 10, and a ratchet wheel 132 is likewise fixed on the standard 10 and rests immediately above the bearing plate 130. Rings 134 and 135 are rotatable around the ratchet wheel 132 and rest on the bearing plate 130 so that they are independently rotatable about the ratchet wheel 132. The ring 134 is provided with a pawl 138 which is received in a tubular sleeve 140 and pressed into contact with the teeth 142 of the ratchet wheel 132 by means of a spring 144. The ring 135 is also provided with a pawl 139 received in housing 141.

In order to rotate the ring 134 about the ratchet wheel 132, driving arms 150 and 151 are pivoted on studs 152

and 153 intermediate the top and the bottom of the side members 100 and 102 and the bottom ends of the arm 150 are connected to a pin 156 by means of a suitable flexible link 158. The arm 151 is likewise connected to the pin 157 by a link 159. The top end of a member 150 is connected to an elongated guide pin 160 mounted on the rocking frame 60 so that the oscillation of the rocking frame will cause oscillation of the arm 150.

In order to provide the usual oscillatory motion of the seesaw, a pair of links 170 and 172 are mounted in in the hinge members 122 and 124, respectively, and extend from opposite sides of a housing and substantially in alignment with the cradles 40. A rod link 174 is connected to the seat supporting structure in spaced relation to the T-head and the members 170 and 174 are connected together by means of a hinge pin 176. Similarly depending rod link 178 is mounted on the seat supporting structure at the opposite side thereof from the member 174 and connected to the rod 172 by means of a hinge pin 180. An equalizing bar 182 is pivotally mounted on the top of the rocking frame 60 and one end 184 of the rocking bar 182 is connected to the hinge pin 176 by means of a push rod 186. Generally, the opposite end of the equalizing bar 182 is connected to the hinge pin 180 by a push rod 188.

In order to operate the arms 150 and 151 in a straight back and forth motion, guide members 190 and 191 are mounted on the vertical members 100 and 102 in proximity to the ratchet member so that the arm 150 may be passed through a slot 192 for a limited oscillatory motion therein.

In the operation of the seesaw according to the invention, two persons are seated on the seats 50 and 52, respectively, and operate the handles 70 and 72, respectively, to cause oscillatory motion of the rocking frame 60. The movement of the rocking frame 60 in one direction is shown in Figure 1, to cause the push rod 186 to push on the hinge pin 176 to cause a hinged motion of the rods 170 and 174 about the hinge pin 176 so that the hinged brace member will be effectively shortened, while at the same time, the push member 188 will cause a straightening motion between the rods 172 and 178 so that the seesaw will move about the T-head in the usual oscillatory motion. It will be apparent that the reversal of the motion of the handles 70 and 72 will reverse the position of the rocking frame 60 and cause the opposite motion of the seat supporting structure.

At the same time, the oscillatory motion of the rocking frame 60 will cause the arms 150 and 151 to oscillate about the pivots 152 and 153 so that the pawls 138 and 139 will be moved into engagement with different ones of the teeth 142 of the ratchet 132 so that the entire device will be caused to move in step-by-step relation around the standard 10.

To discontinue the rotary motion, the arms 150 and 151 are simply disconnected from the rocking frame 60.

To stop the seesaw action, the rods 186 and 188 are disconnected from the rocking frame 60. Preferably, the rods 186 and 188 are then locked to the seat supporting structure.

For purposes of exemplification, a particular embodiment of the invention has been shown and described according to the best present understanding thereof. However, it will be apparent to those skilled in the art that various changes and modifications may be made in

the construction and arrangement of the parts thereof without departing from the true spirit of the invention.

What is claimed as new is as follows:

1. A seesaw comprising a fixed standard, a first guide bearing mounted adjacent the top of said standard, a second guide bearing spaced from said first guide bearing and mounted on said standard, a T-shaft journaled in said guide bearings, a plate type bearing interposed between the head of said T-shaft and said first guide bearing, spaced apart sleeve bearings journaled on the head of said T-shaft, seat supporting structure rails fixed on said sleeve bearings, a rocking frame mounted on said seat supporting structure, an operating handle pivoted adjacent each end of said seat supporting structure, link rods connecting said handles to said rocking frame, a housing mounted on the head of said T-shaft and rotatable around said standard, stop means carried by said housing for limiting the angular movement of said seat supporting structure, a rod pivotally connected to said seat supporting structure in spaced relation from said rocking frame, a rod pivotally connected to said housing in spaced relation to said head of said T-shaft, said rods being pivotally connected together, a link rod connected to the connection between said rods and to said rocking frame, a ratchet wheel fixed on said standard, a ring rotatably mounted around said ratchet wheel, an arm pivotally mounted on said housing intermediate the ends thereof, one end of said arm being connected to said rocking frame for oscillation thereby, a link connecting said arm to said ring, and a pawl carried by said ring and engageable with said ratchet wheel.

2. A seesaw comprising a fixed standard, a seat supporting structure mounted for rotation about the axis of said standard, an annular ratchet wheel fixed on said standard in spaced relation to said seat supporting structure, a rocking frame pivotally mounted on said seat supporting structure on an axis intersecting the axis of said standard, operating handles pivotally mounted on said seat supporting structure in spaced relation to said rocking frame, links operatively connecting said handles to said rocking frame, a pair of side pieces suspended on said supporting structure and substantially coaxial with said standard, an arm pivoted on said housing between said board and said ratchet wheel, a ring rotatably mounted around said ratchet wheel, a pawl in said ring engageable with the teeth of said ratchet wheel, a link connecting one end of said arm to said ring, a driving connection between said rocking frame and said arm, a pair of rods, said rods being hingedly mounted on opposite sides of said side pieces substantially in alignment with said seat supporting structure, a second pair of rods, said second rods being hingedly mounted on said seat supporting structure in spaced relation to said side pieces, the respective sets of rods being hingedly connected together, and drive rods extending between said rocking frame and the hinge connections of said sets of rods.

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