Aug. 10, 1965 W. MOTYKA 3,199,868

COMBINED SEE-SAW AND ROUNDABOUT APPARATUS

Filed April 24, 1961 3 Sheets-Sheet 1

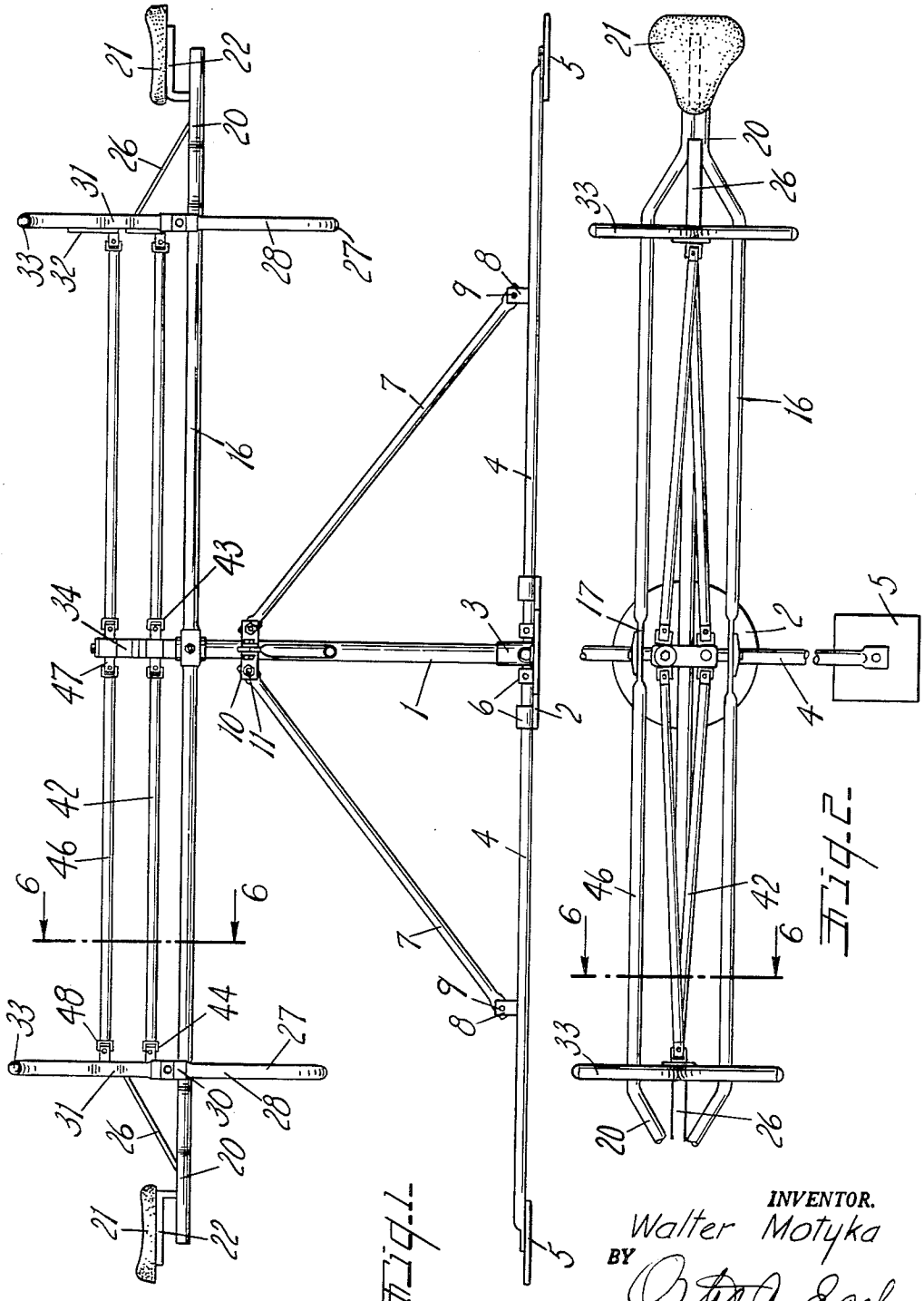


Fig. 1

Fig. 2

INVENTOR.
Walter Motyka
BY
Otto A. Earl
ATTORNEY

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COMBINED SEE-SAW AND ROUNDABOUT APPARATUS

Filed April 24, 1961 3 Sheets-Sheet 2

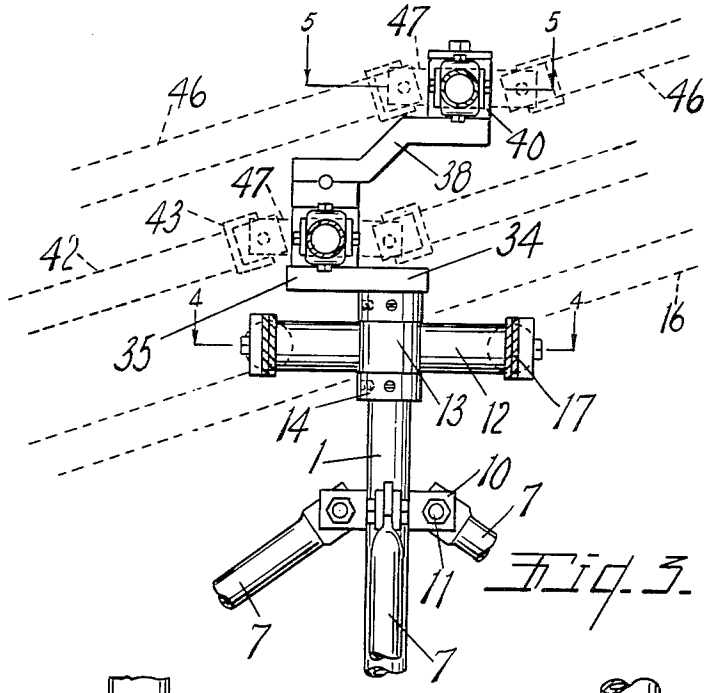


Fig. 3.

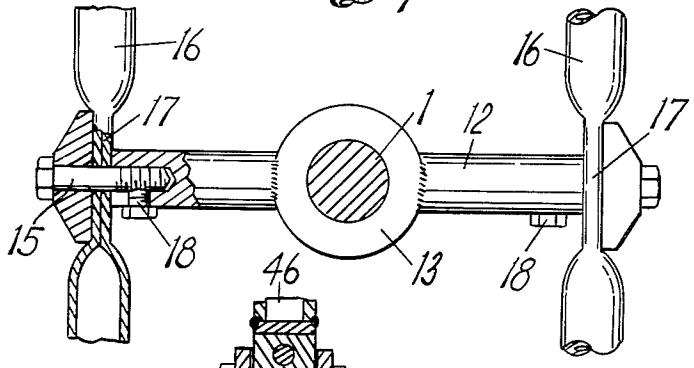


Fig. 4.

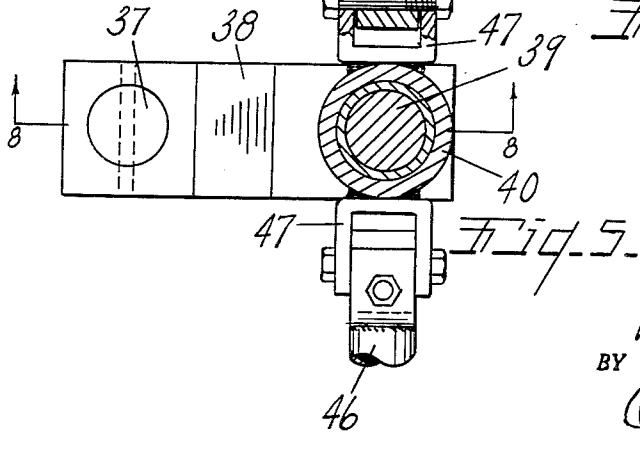


Fig. 5.

INVENTOR.
Walter Motyka
BY
ATTORNEY.

Aug. 10, 1965 W. MOTYKA 3,199,868

COMBINED SEE-SAW AND ROUNDABOUT APPARATUS

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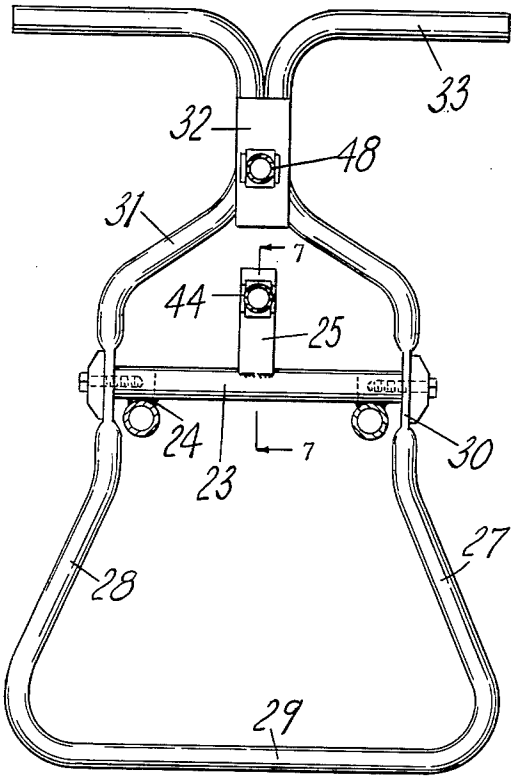


Fig. 6.

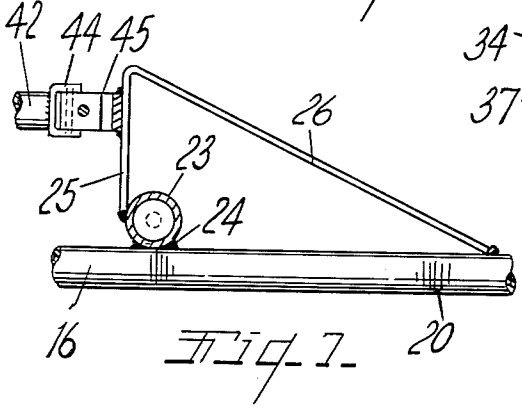


Fig. 7.

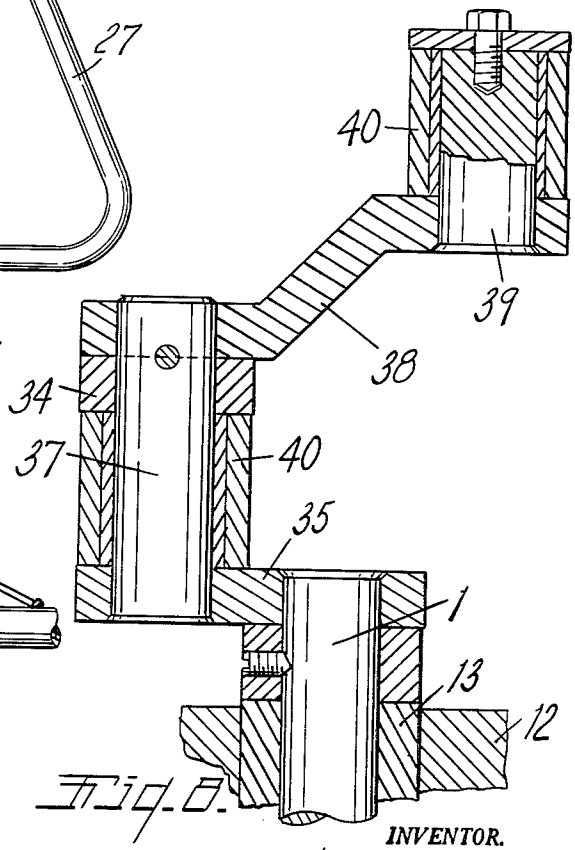


Fig. 8.

INVENTOR.
Walter Motyka
BY
Otto a Earl
ATTORNEY.

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3,199,868

COMBINED SEE-SAW AND ROUND-ABOUT APPARATUS

Walter Motyka, Ludington, Mich., assignor to Motyka Metal Products, Inc., Ludington, Mich.

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9 Claims. (Cl. 272—30)

This invention relates to an amusement and exercising apparatus of the type sometimes designated or known as see-saws and as teeter totters. The main objects of this invention are,

First, to provide an amusement and exercising device which may be largely formed of tube material of uniform dimensions.

Second, to provide an amusement and exercising device which is very strong and durable in proportion to the weight of the material used.

Third, to provide an amusement and exercising apparatus having these advantages which may be stored and shipped in the knock down and easily assembled or erected for use without requiring special tools.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a side elevational view of an amusement and exercising device embodying my invention.

FIG. 2 is a fragmentary plan or top view, one of the base members being omitted.

FIG. 3 is an enlarged fragmentary view partially in section.

FIG. 4 is an enlarged fragmentary view partially in section on a line corresponding to line 4—4 of FIG. 3.

FIG. 5 is an enlarged fragmentary view partially in section on a line corresponding to line 5—5 of FIG. 3.

FIG. 6 is an enlarged fragmentary view on a line corresponding to line 6—6 of FIG. 1.

FIG. 7 is an enlarged fragmentary view partially in section on a line corresponding to line 7—7 of FIG. 6.

FIG. 8 is an enlarged fragmentary view partially in section on a line 8—8 of FIG. 5.

The embodiment of my invention illustrated comprises the upright standard 1 which is mounted on the base member 2, which is provided with an upwardly projecting socket 3 to receive the standard. The base includes four horizontal members 4 having foot pieces 5 at their outer ends, these being connected to the member 2 by means of the clips 6. Four struts 7 are fixedly connected at the upwardly projecting ears 8 of the base members 4 at 9 and to the clamp 10 on the upright by the bolts 11. This provides a structure which may be readily collapsed and at the same time the post or standard 1 is effectively supported and braced, which is a desirable feature as it carries the load.

The crosshead 12 is rotatably mounted on the upright 1 which is provided with a vertical bearing for the crosshead bearing 13 with a supporting collar or thrust bearing 14. The crosshead is provided with bearing members 15 for the laterally spaced carriage bars 16 which are formed of pipe or tubing and have flattened bearing engaging portions 17, see FIGS. 3 and 4. The bearing members 15 are threaded longitudinally into the ends of the crosshead and secured by the set screws 18. Lateral thrust sustaining members or collars are disposed on these bearing members 15 at the outer sides of the carriage bars. These carriage bars 16 have inwardly offset portions 20 at their outer ends on which the seats 21 are mounted, these seats being supported by the brackets 22, see FIGS. 1 and 2. The crossbars 23 are mounted on the carriage bars 16 at the inner sides of their inwardly

offset or converging portions and are fixedly secured thereto as indicated by the welds 24, see FIGS. 6 and 7. Brackets 25 are mounted on these crosspieces 23 to project upwardly therefrom and are provided with braces or struts 26 projecting outwardly and downwardly and secured to the converged portions of the carriage bars 16, see FIGS. 1, 2, 6 and 7.

Actuating members, designated generally by the numeral 27, are formed of pipe or tubing and comprise the side portions 28 connected at their lower ends by the footpiece 29 the side portions having flattened portions 30 which engage bearings provided therefor on the ends of the crosspieces 23. The details of these bearings are not illustrated, but they are desirably such as illustrated in FIG. 4. These actuating members have inwardly converging portions 31 above the crossbar 23 to which are secured the plate-like anchor member 32 above which the ends are turned outwardly to provide hand holds 33, see FIGS. 1, 2 and 6. These parts are arranged so that the occupants of the seats may place their feet upon the foot rests 29 and grasp the hand holds 33 to actuate these actuating members.

Mounted on the upper end of the post is a crank-like unit designated generally by the numeral 34, see FIGS. 3, 5 and 8, which comprises the lower arm 35 fixedly or nonrotatably mounted on the upper end of the standard 1 above the crosshead 12. The arm 35 is provided with an upwardly projecting stud bearing 37 which serves as a support for the oppositely projecting arm 38 which is provided with an upwardly projecting stud bearing 39. These parts constitute a crank-like coupling unit which is, as stated, nonrotatably mounted on the standard above the crosshead 12. The coupling members 40 supportedly engaged with the studs 37 and 39 have oppositely projecting ears or couplings 47 shown in detail in FIGS. 3 and 5.

Strut links or rods 42 are swively connected by the couplings 43 to the ears or couplings 47 and are connected at their outer ends by the couplings generally designated by the numeral 44, which are also of the universal joint type, to the supports 45 as is clearly shown in FIG. 7. The links 46 are substantial duplicates of the links 42 and they are connected to the upper arm 38 by couplings 47 and to the actuating members by similar couplings 48. With this arrangement of parts, an occupant of one seat pushes on the foot rest 29 and pulls on the handle while the occupant of the other seat pushes on the handle and relaxes his push on the foot piece. The result is that the carriage bars are tilted vertically as indicated in FIG. 3, and at the same time a rotative movement is imparted to the carriage relative to the standard or post.

With this arrangement of parts, they may be formed of relatively light stock and at the same time the resulting structure is strong and durable and not only provides an amusement device but also means for exercising the arms, legs and body muscles of the users. The structure also has the advantage of having an attractive and finished appearance.

It will be noted that the major portion of this structure may be formed of pipe or tubing. This has substantial advantage from the production standpoint and further resistance to bending is relatively high in proportion to the weight of the stock used. I have not described in detail the couplings for all of the parts as they may be substantially varied and available stock material in the way of bolts and screws are desirably used, and further they may be substantially varied if desired. It will be understood from the foregoing that various parts may be shipped or stored in the knock down and set up without requiring special tools, wrenches being the main requirement.

I have illustrated and described my invention in a highly practical and desirable commercial embodiment thereof. I have not attempted to illustrate or describe other embodiments or adaptations, as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. An amusement and exercising apparatus comprising a standard provided with a vertically disposed bearing at its upper end, a crosshead rotatably mounted on said vertically disposed bearing on said standard and having horizontally disposed bearings at its outer ends, laterally spaced carriage bars mounted on said bearings on said crosshead for vertical tilting movement thereon, said carriage bars having converging portions at their outer ends, seats mounted on said outer end portions of said carriage bars, crossbars disposed transversely of said carriage bars at the inner sides of their said converging outer end portions thereof, brackets mounted on said crossbars to project upwardly and centrally therefrom, actuating members swingably mounted on horizontal axes on said crossbars and including loop-like foot rest portions disposed below said carriage bars in operative relation to said seats and having upwardly converging portions projecting upwardly relative to said carriage bars and terminating in outwardly projecting hand holds positioned at the front of and in grasping relation to said seats, a crank-like coupling unit comprising a first arm nonrotatably mounted on said standard above said crosshead and provided with a vertical bearing disposed in laterally spaced relation to said standard, a second arm nonrotatably mounted on said bearing on said first arm in vertically spaced oppositely projecting relation to said first arm and provided with another vertical bearing, said bearings being uniformly spaced from the axis of rotation of said crosshead, strut links pivotally connected to the bearing on said first arm and to said brackets on said crossbars, and actuating links pivotally connected to said actuating members in vertically spaced relation to said strut links and to said bearing on said second arm of said crank-like coupling unit arms, said actuating and strut links being in vertically spaced planes.

2. An amusement and exercising apparatus comprising a standard provided with a vertically disposed bearing at its upper end, a crosshead rotatably mounted on said vertically disposed bearing on said standard and having horizontally disposed bearings, laterally spaced carriage bars mounted on said bearings on said crosshead for vertical tilting movement thereon, seats mounted on the outer end portions of said carriage bars, crossbars disposed transversely of said carriage bars at the inner side of said seats, brackets mounted on said crossbars to project upwardly therefrom, actuating members swingably mounted on said crossbars and including loop-like foot rest portions disposed below said carriage bars in operative relation to said seats and having upwardly converging portions projecting upwardly relative to said carriage bars and terminating in outwardly projecting hand holds positioned at the front of and in grasping relation to said seats, a crank-like coupling unit comprising a first arm nonrotatably mounted on said standard above said crosshead to project laterally therefrom, a second arm mounted on said first arm in oppositely projecting vertically spaced relation thereto, said arms being provided with horizontally spaced and vertically disposed bearings at their outer ends uniformly spaced from the axis of rotation of said crosshead, strut links pivotally connected to the bearing on said first arm and to said brackets on said crossbars, and actuating links pivotally connected to said actuating members in vertically spaced relation to said strut links and to the bearing on the said second arm of said crank-like coupling unit, said actuating and strut links being in vertically spaced planes.

3. An amusement and exercising apparatus comprising a standard provided with a vertically disposed bearing at its upper end, a crosshead rotatably mounted on said vertically disposed bearing on said standard and having horizontally disposed bearings at its outer ends, oppositely projecting pairs of laterally spaced carriage bars mounted on said bearings on said crosshead for vertical tilting movement thereon, said carriage bars having converging portions at their outer ends, seats mounted on said outer end portions of said carriage bars, crossbars disposed transversely of and fixedly connected to said carriage bars at the inner sides of their said converging outer end portions, brackets supportedly mounted on said carriage bars to project upwardly and centrally therefrom, actuating members swingably mounted on said crossbars and including foot rest portions disposed below said carriage bars in operative relation to said seats and having upwardly projecting portions provided with hand holds positioned at the front of and in grasping relation to said seats, a nonrotatable crank-like coupling unit mounted on said standard in upwardly projecting relation above said crosshead and having vertically spaced arms projecting oppositely from the axis of said bearing on said standard with vertical bearings on the opposite outer ends of each arm, strut links pivotally connected to the bearing on the lower of said arms and to said brackets, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connection of said strut links thereto and to the bearing on the upper of said coupling unit arms.

4. An amusement and exercising apparatus comprising a standard provided with a vertically disposed bearing at its upper end, a crosshead rotatably mounted on said vertically disposed bearing on said standard and having horizontally disposed bearings spaced laterally from said standard, laterally spaced carriage bars mounted on said bearings on said crosshead for vertical tilting movement thereon, seats mounted on said outer end portions of said carriage bars, crossbars disposed transversely of and fixedly secured to said carriage bars in inwardly spaced relation to said seats, brackets supportedly mounted on said carriage bars to project upwardly in front of and adjacent said seats thereon, actuating members swingably mounted on said crossbars and including foot rest portions disposed below said carriage bars in operative relation to said seats and having upwardly projecting portions provided with hand holds positioned at the front of and in grasping relation to said seats, a crank-like coupling unit nonrotatably mounted on said standard in upwardly projecting relation from said crosshead and provided with vertically spaced arms projecting oppositely relative to the axis of said bearing on said standard, strut links universally pivotally connected to the lower of said arms and to said brackets, and actuating links pivotally connected to said actuating members in vertically spaced relation to said strut links and universally pivotally connected to the upper of said coupling unit arms.

5. A device of the class described comprising a standard, a crosshead rotatably mounted on a vertical axis on said standard, laterally spaced carriage bars mounted on said crosshead for vertical tilting movement thereon, said carriage bars having converging portions at their outer ends, seats mounted on said converging outer end portions of said carriage bars, crossbars mounted on said carriage bars at the inner sides of their said converging outer end portions, actuating members swingably mounted on said crossbars and including foot rests disposed below said carriage bars in operative relation to said seats and hand holds disposed in vertically spaced relation to said carriage bars and in grasping relation to said seats, a crank-like coupling unit nonrotatably mounted on said standard to project above said crosshead and provided with vertically spaced arms projecting oppositely relative to said vertical axis of

said crosshead, strut links universally pivotally connected to the outer end of the lower of the arms and to said crossbars, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links to said crossbars and universally pivoted to the outer end of the upper of said arms, the pivotal connections to said arms being spaced on opposite sides of said vertical axis of said crosshead.

6. A device of the class described comprising a standard, a crosshead rotatably mounted on a vertical axis on said standard, laterally spaced carriage bars having converging outer end portions mounted on said crosshead for vertical tilting movement thereon, seats mounted on said carriage bars, crossbars mounted on said carriage bars at the inner sides of their said converging outer end portions, actuating members swingably mounted on said cross bars and including foot rests disposed below said carriage bars in operative relation to said seats and hand holds disposed in vertically spaced relation to said carriage bars and in grasping relation to said seats, a crank-like coupling unit nonrotatably mounted on said standard above said crosshead and provided with vertically spaced arms projecting oppositely relative to said vertical axis of said crosshead, strut links universally pivotally connected to the lower of the arms and pivotally connected to said cross bars, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links thereto and universally pivotally connected to the upper of said arms, the pivotal connections to said arms being spaced on opposite sides of said vertical axis of said crosshead.

7. A device of the class described comprising a standard, a carriage comprising laterally spaced bars having their mid-sections mounted on said standard for vertical tilting and rotative movement thereon, seats mounted on the ends of said carriage bars, actuating members swingably mounted on said carriage bars in inwardly spaced relation to said seats and including foot rests disposed below said carriage bars in operative relation to said seats and hand holds disposed in vertically spaced relation to said carriage bars and in grasping relation to said seats, a crank-like coupling unit fixedly and nonrotatably mounted on said standard adjacent said carriage and provided with vertically spaced arms projecting oppositely relative to the axis of rotation of said carriage, strut links universally pivotally connected to the lower of said arms and pivotally connected to said carriage bars at points adjacent said actuating members, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links to said carriage and universally pivotally connected at their other ends to the upper arms, the pivotal connections to said arms being spaced on opposite sides of the axis of rotation of said carriage.

8. A device of the class described comprising a standard, a carriage having its mid-section mounted on said standard for vertical tilting and rotative movement thereon, seats mounted on the ends of said carriage, actuating members swingably mounted on horizontal axes on said carriage in inwardly spaced relation to said seats and including foot rests disposed below said carriage in operative relation to said seats and hand holds disposed in vertically spaced relation to said carriage and in grasping relation to said seats, a crank-like coupling nonrotatably mounted on said standard and provided with vertically spaced arms projecting oppositely relative to the axis of rotation of said carriage, strut links universally pivotally connected to one of said arms and pivotally connected to said carriage at points adjacent said actuating members, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links to said carriage and universally pivotally connected to the other of said arms, the pivotal connections to said arms being spaced on opposite sides of the axis of rotation of said carriage.

9. A device of the class described comprising a standard, a carriage having its mid-section mounted on said standard for vertical tilting and rotative movement thereon, seats mounted on swinging portions of opposite ends of said carriage, actuating members pivotally mounted on horizontal pivots on said carriage in spaced operative relation to said seats, fixed nonrotatable vertically spaced arms projecting oppositely relative to the axis of rotation of said carriage on said standard, strut links universally pivotally connected to one of said arms and pivotally connected to said carriage at points adjacent said actuating members, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links to said carriage and universally pivotally connected at their other ends of the other of said arms, the pivotal connections to said arms being spaced on opposite sides of the axis of rotation of said carriage.

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RICHARD C. PINKHAM, *Primary Examiner.*

EVON C. BLUNK, *Examiner.*