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E. C. SIVERTS  
ROUNABOUT AMUSEMENT DEVICE

2,659,601

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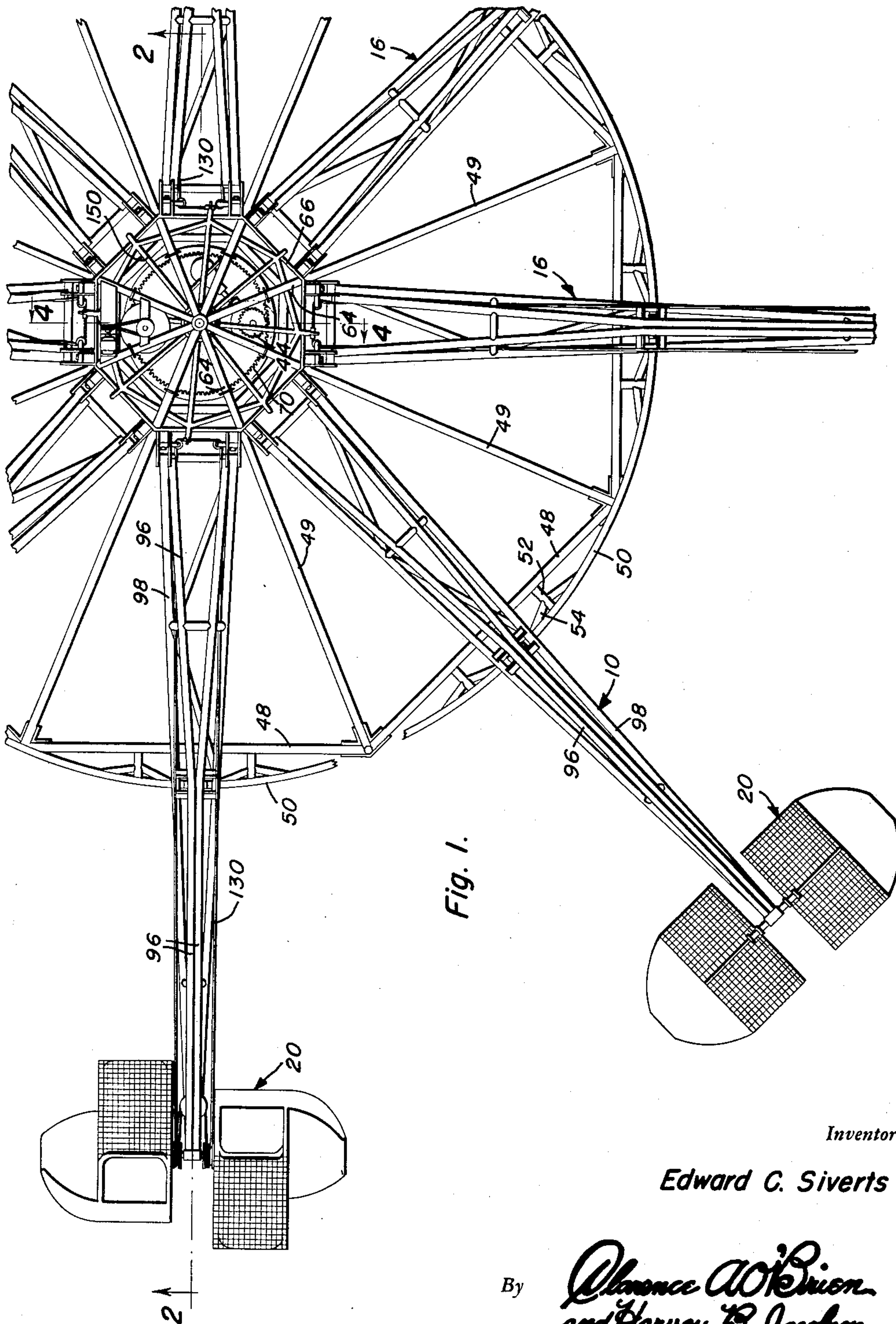


Fig. 1.

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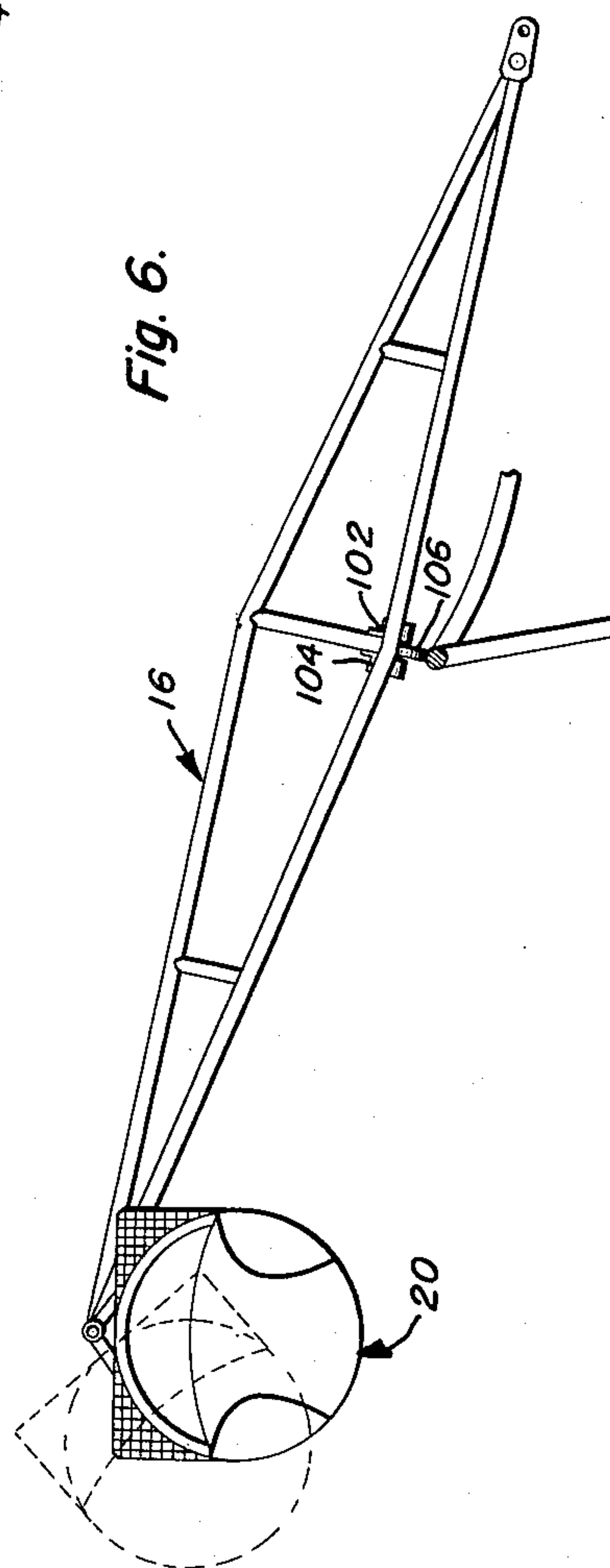
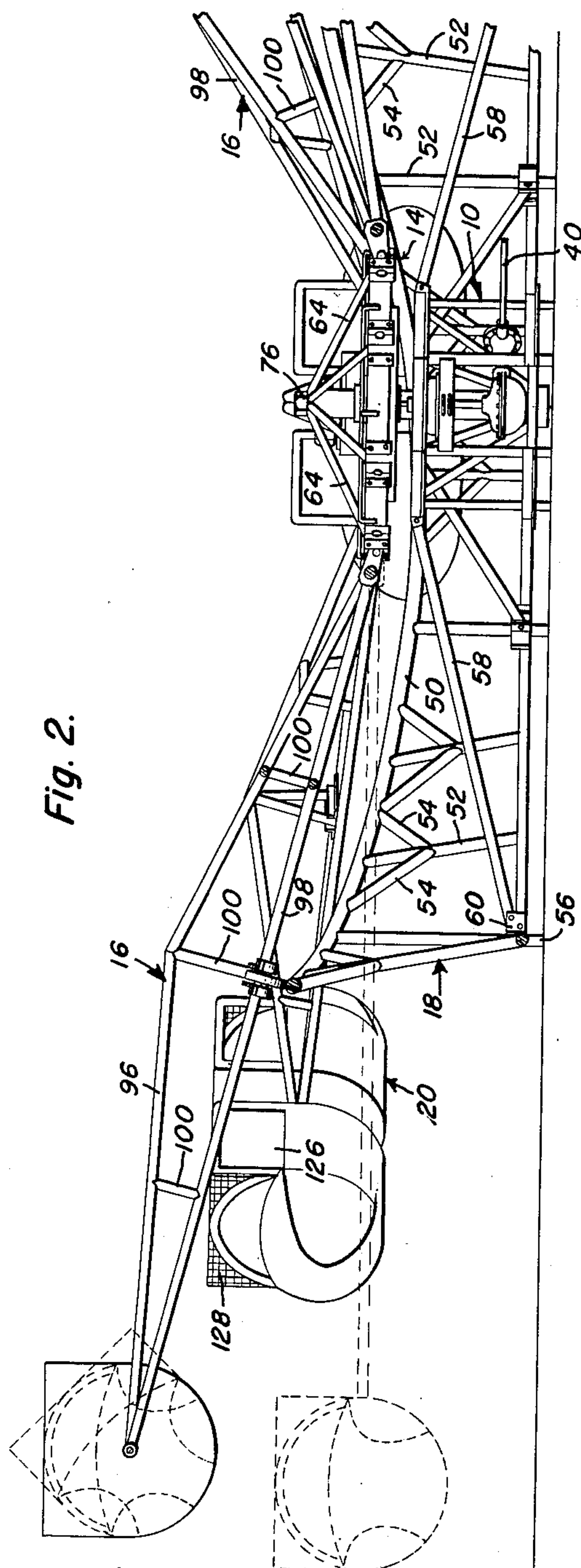
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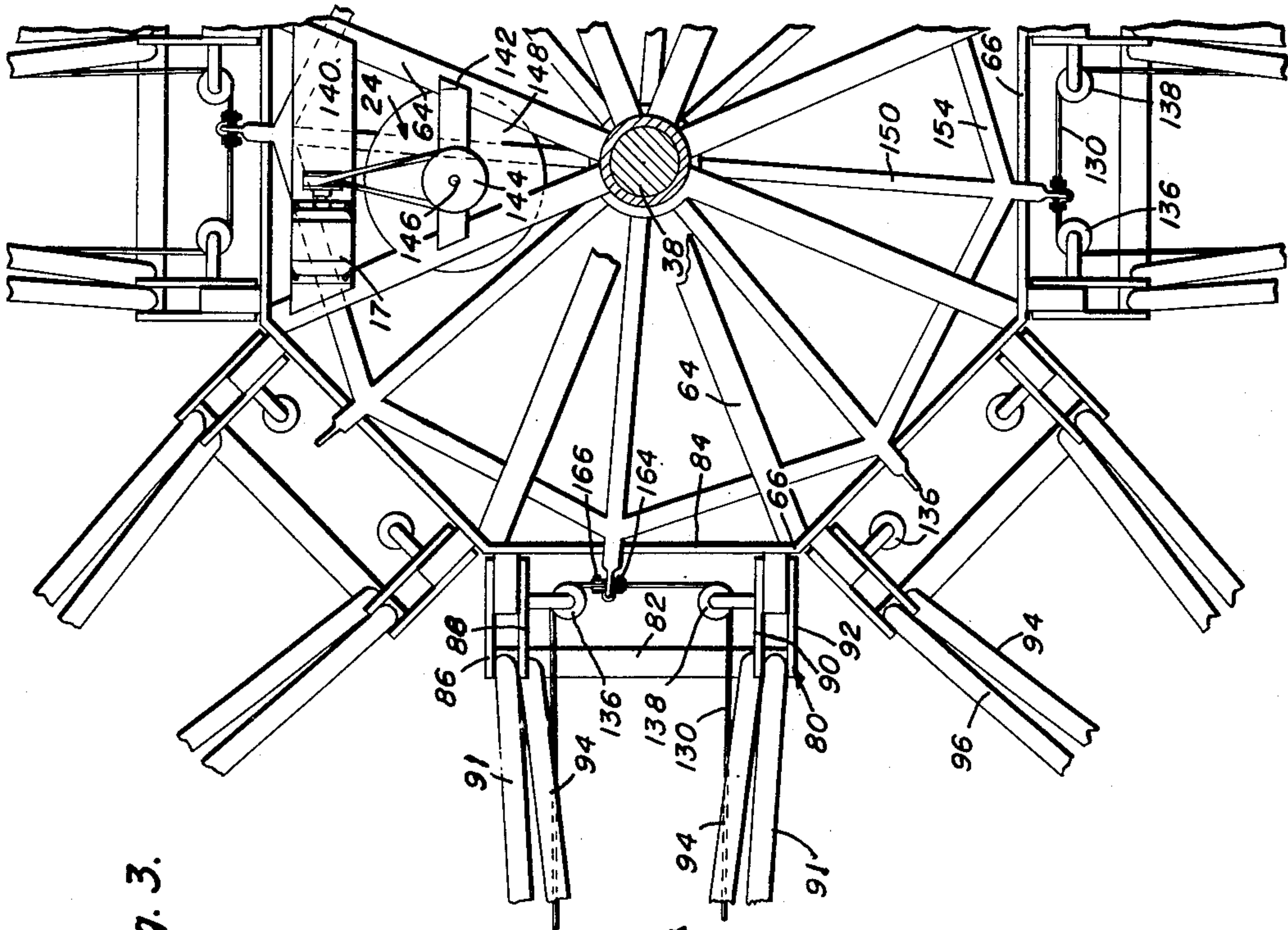
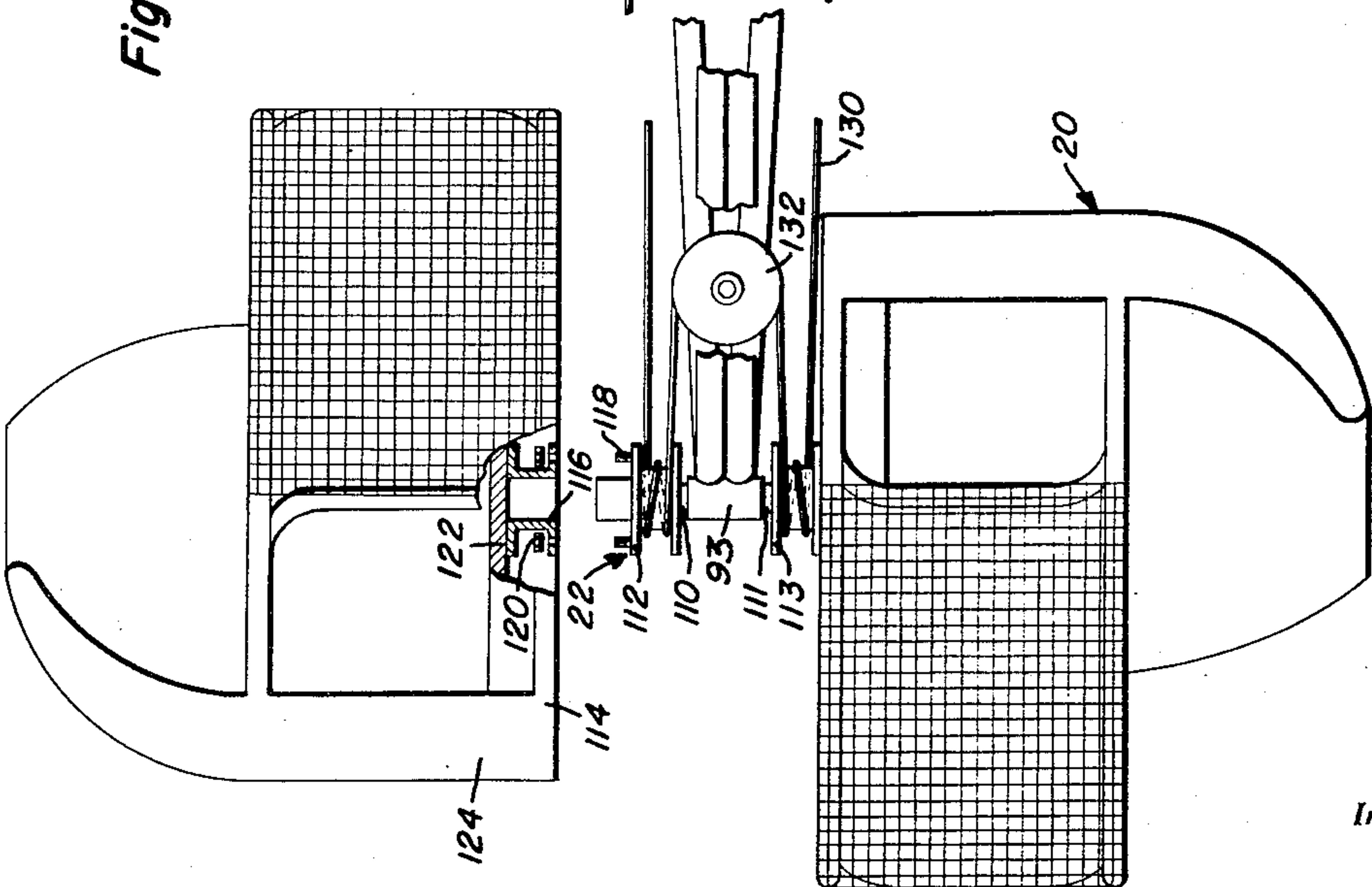


Fig. 3.



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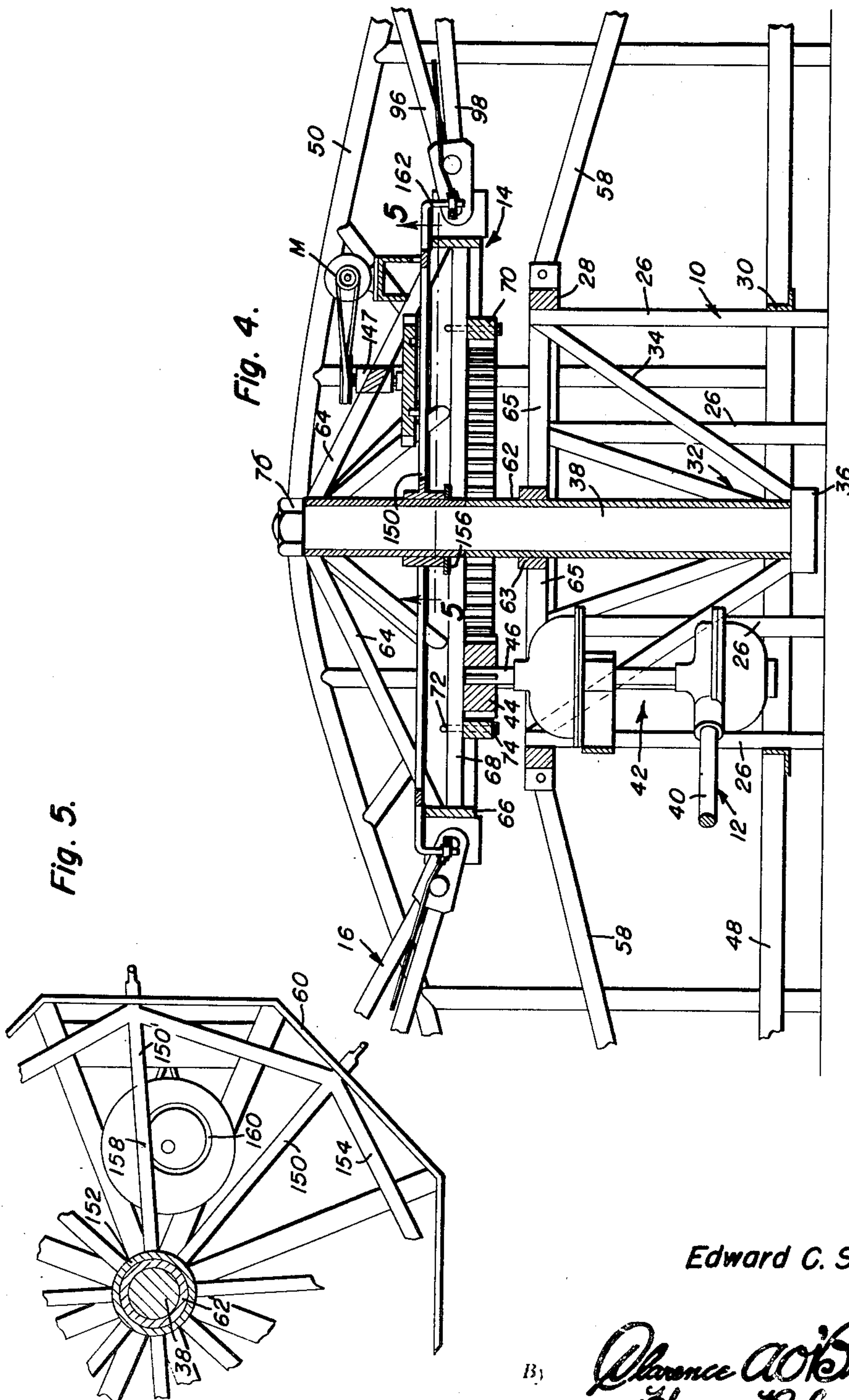
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ROUNABOUT AMUSEMENT DEVICE

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## UNITED STATES PATENT OFFICE

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## ROUNABOUT AMUSEMENT DEVICE

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Application January 17, 1951, Serial No. 206,329

6 Claims. (Cl. 272—36)

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The present invention relates to improvements in amusement devices and more particularly to a roundabout.

An object of the present invention is to provide an improved roundabout wherein the radially extending arms carrying the buckets are supported at intermediate portions thereon by means of rollers engaged with a circular track.

A further object of the present invention provides an improved roundabout wherein the circular track is of undulated construction whereby the buckets will be substantially vertically reciprocated upon rotation of the central frame means to which the radially extending arms are connected.

A further object of the present invention is to provide a means for oscillating the buckets about an axis lying in a horizontal plane and perpendicular to the longitudinal axis of the arms.

Still another object of the present invention is to provide a pair of buckets on the ends of each of the arms and wherein each of the buckets is oscillatable about a common axis and adapted to oscillate oppositely to the second bucket whereby the two buckets on each arm are oscillating in opposite directions while rotating about the central axis of the roundabout.

A further object of the present invention is to provide a positive means for effecting relatively opposite oscillatory movement to each of the pairs of buckets.

Various other objects and advantages will become apparent from the detailed description to follow. The best form in which I have contemplated applying my invention is clearly illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the entire roundabout with parts broken away;

Figure 2 is a side elevational view of the roundabout of Figure 1 with the buckets secured to the outer end of an arm shown in various oscillated and vertically displaced positions by dotted lines;

Figure 3 is a top plan view, enlarged from Figure 1 showing the details of the means for oscillating the buckets;

Figure 4 is a vertical transverse sectional view taken substantially along the plane of line 4—4 of Figure 1;

Figure 5 is a top plan view of a portion of the roundabout showing the details of the means for effecting reversing movement of the cable which is in turn adapted to effect oscillation of the buckets; and

Figure 6 is a detail elevational view showing

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one of the arms supporting a bucket with the roller on the arm being disposed on the circular track.

Referring more particularly to the drawings, wherein like numerals designate like parts throughout, the numeral 10 designates generally the central frame means upon which the drive means 12 is mounted and which rotatably supports rotating structure of the roundabout, the numeral 14 designates generally the rotating central frame means to which the plurality of radially extending arms 16 are secured for rotation therewith. The numeral 18 designates generally the circular track, the numeral 20 designates generally the pair of buckets supported on the other end of each of the arms 16, the numeral 22 designates generally the cable means for effecting oscillating movement of the buckets 20 and the numeral 24 designates generally the means for effecting reversing movement of the cable means 22, the means 24 being mounted on the rotating central frame means 14.

The central frame means 10 is comprised of a plurality of vertically disposed bars 26 which are disposed in parallel spaced relation and joined by the non-circular elements 28 and 30. A plurality of radially disposed bars 32 extend inwardly from the elements and have a bearing ring 34 supported thereon for rotatably receiving the sleeve 36.

A bearing support 38 is supported within the supporting frame 10 by means of a plurality of inclined rods 40 which have their upper ends secured to the non-circular ring 28 while their lowermost ends are suitably secured to the enlarged head 42 of the bearing shaft 44.

The drive for the roundabout includes the drive shaft 46 which is connected to the power reduction and gearing arrangement 48 which has a pinion 50 secured to the upper end of the driven shaft 52.

The circular track 18 is comprised of a substantially circular bar 48 and an upper bar 50 of undulated configuration, the bars 48 and 50 being joined by a plurality of upwardly and outwardly inclined brace bars 52 with a plurality of rigidifying bars 54 connecting the brace bars 52 with intermediate portions of the upper bar 50. The lower bar 48 has a plurality of downwardly extending supporting standards 56 extending therefrom for supporting the entire roundabout on a ground surface. A plurality of interconnecting bars 58 are provided for securing the circular frame 18 to the supporting frame 10, the inner ends of the bars 58 being secured



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to the non-circular ring 28 while the outer ends of the bars 58 are secured to the lower ring 48 by means of the brackets 60. Additional bracing struts are provided for interconnecting the lower angle iron ring 30 with the lower rings 48 whereby the circular track 18 and central supporting frame will be fixedly positioned with respect to each other to form a single unit.

The rotating central frame means 14 is comprised of a bearing sleeve 62 which is rotatably disposed on the bearing shaft 38 and has a plurality of radially extending and downwardly inclined supporting bars 64 connected therewith. The outer ends of the bars 64 are fixedly secured to the polygonal member 66 to which the plurality of arms 60 are connected. A plurality of horizontally disposed and radially extending rods 68 interconnect the polygonal element 66 with the sleeve 62 and an internal gear 70 is supported by the bars 68, as shown best in Figure 4. U-shaped rods 72 overlie the rods 68 and have their leg portions extending through the internal gear 70 with nuts 74 threaded on their ends. An enlarged nut 76 is threadedly engaged on the upper end of the gearing shaft 38 for retaining the rotating central frame means from vertical displacement.

The means for securing the arms 16 to the central rotating frame 14 is best shown in Figure 3 as comprising the attaching means 80. The attaching means 80 includes a bar 82 which is maintained in spaced relation to the flat face 84 of the polygonal member 66 by means of the plurality of attaching ears 86, 88, 90 and 92.

Each of the arms 16 is comprised of a pair of outwardly extending converging rods 91 which have their outer ends joined together by means of the sleeve 93. A pair of upper rods 94 are angulated at their central portions so that their outermost portions 96 are substantially joined together while their inner portions 98 diverge for connection to the bar 82 and outer portions thereof. A plurality of rigidifying bars 100 connect intermediate portions of the rods 94 and 91 to provide rigid individual units. The outer ends of the upper rods 94 are also integrally connected to the sleeve 93. It will thus be seen that as the central frame is rotated, the attaching means 80 will effect rotation of the arms 16 therewith.

The means for supporting the arms 16 on the circular track 18 is comprised of a pair of bearing brackets 102 and 104 in which is rotatably disposed a roller or wheel 106 which is adapted to be engaged on the upper surface of the track 18.

Rotatably supported in the bearing sleeve 93 are a pair of rocker shafts 110. Each of the rocker shafts 110 has a spindle 112 secured thereon for rotation therewith and a bucket 114 provided with an attaching member 116 is secured to the outer end of each of the bucket shafts 110 and spindles 112 by means of the screws 118 and nuts 120. The attaching member 116 is fixedly secured to the inner wall 122 of the bucket 114.

Each of the buckets 114 is formed of a body portion 124 having an access opening 126 and a screen covering 128 thereover. Of course, suitable means may be provided within the bucket for comfortably seating occupants and for strapping the occupants therein, as is conventional in amusement devices of the present type.

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The means 22 for effecting opposite oscillating movement of the pair of buckets on the other end of each of the arms 16 includes the spindles 112 and 113 supported by the individual shafts 110 and 111 rotatably received within the bearing sleeve 93. An endless cable 130 is engaged over the central portions of the spindles 112 and 113 and a sheave 132 is supported between the rod portions 96 and the lower rods 91 of the arms 16 whereby the cable 130 may travel from one of the spindles 112 to the other spindle 113 and vice versa. The cable 130 extends inwardly to the attaching means 80 and is rotatably disposed over the pair of sheaves 136 and 138, the sheaves 136 and 138 being rotatably supported by the attaching ears 88 and 90.

The means 24 for effecting reversing movement of the cable 130 is best disclosed in Figures 3, 4 and 5 and includes as a driving power the electric motor supported on the platform 140 which is in turn fixedly secured to the radially extending rods 64 of the central frame means 14. A second platform 142 is supported on the rods 64 at intermediate portions thereof and has a sheave 144 rotatably disposed thereon whereby the rotating drive of the motor may be converted to a rotating drive of the vertical shaft 146. The shaft 146 is supported in the bearing element 147 and has its lower end supporting the disk 148 for rotation in a horizontal plane and above the plane of the rotating non-circular member 66.

Figure 5 shows an oscillating frame comprised of a plurality of radially extending shafts 150 having their innermost ends connected by the bearing sleeve 152 and having their outermost ends integrally connected together by means of the joinder rods 154. The sleeve 152 is rotatably disposed about the bearing sleeve 62 and is held in vertical support by means of the bearing ring 156. An intermediate portion of the radially extending rod 150 is provided with an upwardly projecting pin 158. The lower surface of the disk 148 is formed with an eccentric groove 160 which is adapted to receive the pin 158. It will thus be seen that when the motor is actuated, the disk 148 will be rotated it will effect operating movement of the oscillating frame with respect to the central rotating frame 14.

The outer ends of the rods 150 are formed with downwardly extending portions 162 which are clampingly engaged with the cable 130 by means of the complementary brackets 164 and 166.

In view of the foregoing description of the construction of the roundabout of the present invention, it is believed that one skilled in the art will readily understand the operation thereof. When the drive shaft 40 is actuated, rotating movement is imparted to the internal gear 70 and the central rotating frame 14 to a suitable reduction gear arrangement at 42. Inasmuch as the plurality of arms 16 are fixedly secured to the central rotating frame 14, the arms will rotate therewith. At the same time that the arms 16 are rotating, intermediate portions thereof are supported by the circular track 18 and a vertical pivoting movement is imparted to the arms because of the undulated configuration of the upper track rod. When it is desired to effect oscillating movement to the buckets 20, a pair of buckets being provided on the outer ends of each of the arms 16, the motor M is ac-



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tuated, thereby effecting rotating movement of the disk 148. The oscillating frame will thereby be oscillated with respect to the central rotating frame 14 by means of the cooperation between the pin 158 and the groove 160 on the disk 148 inasmuch as the oscillating frame is connected to the cable 130, reciprocation of the cable will be effected. It will further be seen that inasmuch as the individual buckets of the pair of buckets on each of the arms 16 are separately supported on individual shafts 110 and 111, opposite rotation of the spindles 112 and 113 will be produced by reciprocation of the cable 130, thereby imparting opposite oscillating movement to the buckets on each arm.

Having described the invention, what is claimed as new is:

1. A roundabout comprising a central frame means mounted for rotation about a vertical axis, a plurality of radially extending arms connected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof for engagement with said track, and each of said arms having a pair of buckets oscillatable about a common axis and oscillatably carried by their respective arm, said buckets being oscillatable about a horizontal axis perpendicular to said arms, and means for effecting relatively opposite oscillatory movement of the buckets of each pair of buckets, said last named means including a power rotated disk mounted on said central frame means, endless cable means mounted on each of said arms and connected to said buckets for effecting oscillating movement thereof upon reversing movement of said cable means, and means interconnecting said disk with said cable whereby rotation of said disk will effect reciprocation of said cable:

2. A roundabout comprising a central frame means mounted for rotation about a vertical axis, a plurality of radially extending arms connected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof for engagement with said track, and each of said arms having a pair of buckets oscillatable about a common axis and oscillatably carried by their respective arm, said buckets being oscillatable about a horizontal axis perpendicular to said arms, and means for effecting relatively opposite oscillatory movement of the buckets of each pair of buckets, said last named means including a power rotated disk mounted on said central frame means, endless cable means mounted on each of said arms and connected to said buckets for effecting oscillating movement thereof upon reversing movement of said cable means, an eccentric groove in one face of said disk, a rocker frame oscillatably mounted on said central frame means for rotation therewith, a pin connected to said rocker frame means and engaged in said groove whereby rotation of said disk will effect oscillating movement of said rocker frame with respect to said central frame means, said rocker frame having outwardly extending fingers connected to said cable means for reciprocating the same.

3. A roundabout comprising a central frame means mounted for rotation about a vertical axis, a plurality of radially extending arms con-

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nected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof for engagement with said track, and each of said arms having a pair of buckets oscillatable about a common axis and oscillatably carried by their respective arm, said buckets being oscillatable about a horizontal axis perpendicular to said arms, and means for effecting relatively opposite oscillatory movement of the buckets of each pair of buckets, said last named means including a power rotated disk mounted on said central frame means, endless cable means mounted on each of said arms and connected to said buckets for effecting oscillating movement thereof upon reversing movement of said cable means, an eccentric groove in one face of said disk, a rocker frame oscillatably mounted on said central frame means for rotation therewith, a pin connected to said rocker frame means and engaged in said groove whereby rotation of said disk will effect oscillating movement of said rocker frame with respect to said central frame means, said rocker frame having outwardly extending fingers connected to said cable means for reciprocating the same, said cable means being comprised of an endless cable supported on a plurality of sheaves secured to said arms.

4. In a roundabout having a central frame means mounted for rotation about a vertical axis, a plurality of radially extending arms connected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof for engagement with said track, and buckets for supporting passengers, said buckets being oscillatably connected to said arms; the improvement comprising the connecting of said buckets in pairs on each of said radially extending arms, said buckets being separately rotatably mounted on shafts carried by the outer ends of said arms, means for effecting opposite oscillatory movement of the buckets of each pair, said means being responsive to movement of an oscillatable frame carried by said central frame means for rotation therewith, and means for oscillating said oscillatable frame.

5. In a roundabout having a central frame means mounted for rotation about a vertical axis, a plurality of radially extending arms connected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof, for engagement with said track, and each of said arms having a pair of buckets oscillatable about a common shaft and oscillatably carried by their respective arm; the improvement comprising means for effecting opposite oscillatory movement to the buckets of each pair, said means including a power rotated disk mounted on said central frame means, an endless cable mounted on each of said arms and connected to said buckets for effecting oscillating movement thereof upon reversing movement of said cable, and an oscillatable frame carried by said central frame means interconnecting said disk with said cables whereby rotation of the disk will effect reciprocation of said cables.

6. A roundabout comprising a central frame



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means mounted for rotation about a vertical axis; a plurality of radially extending arms connected to said central frame means for rotation therewith, a stationary track concentrically disposed about said central frame means and underlying intermediate portions of said arms, rollers carried on said arms at said intermediate portions thereof for engagement with said track, and each of said arms having a pair of buckets oscillatable about a common axis and oscillatably carried by their respective arm, said buckets being oscillatable about a horizontal axis perpendicular to said arms, means for effecting relatively opposite oscillatory movement of the buckets of each pair of buckets, said means being responsive to movement of an oscillatable frame carried by said cen-

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tral frame means, and means for oscillating said oscillatable frame, said track being of undulated construction whereby said buckets will be reciprocated in a substantially vertical direction upon rotation of said central frame means.

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