June 18, 1963 B. C. RANNEY 3,093,869

REVOLVING LIVING ROOM

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Fig. 1

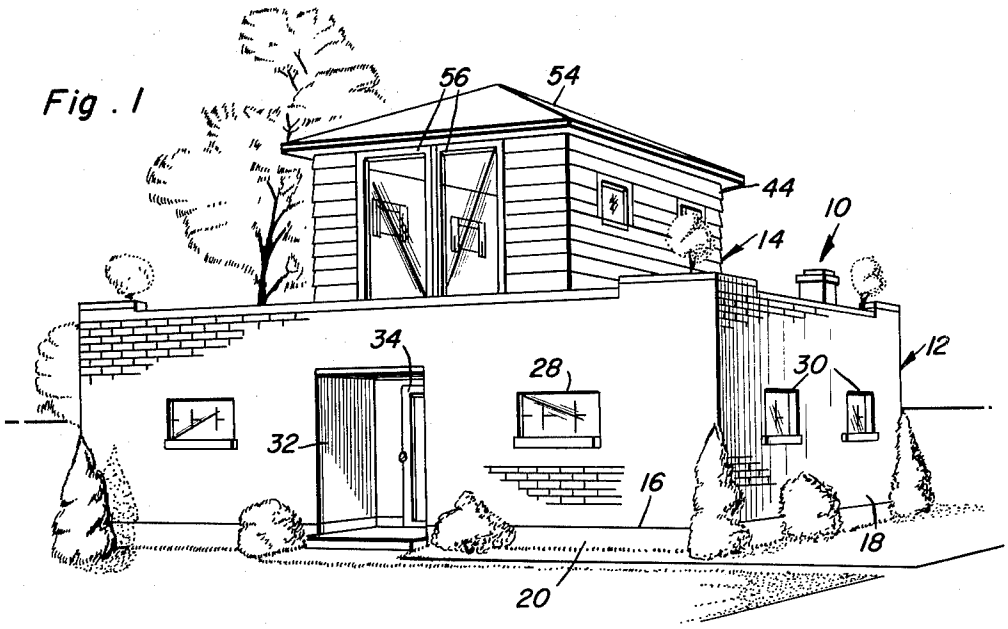

Fig. 4

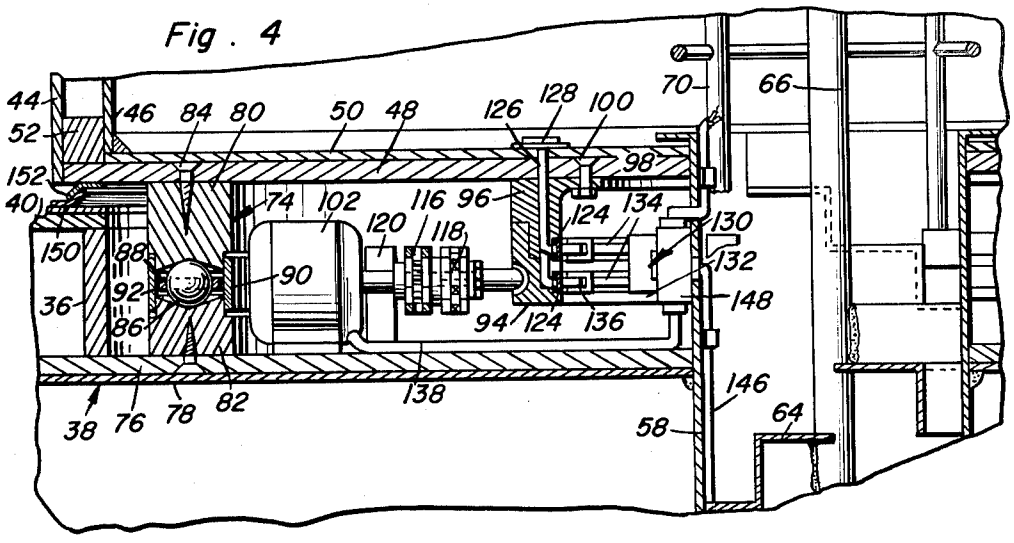

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Fig. 2

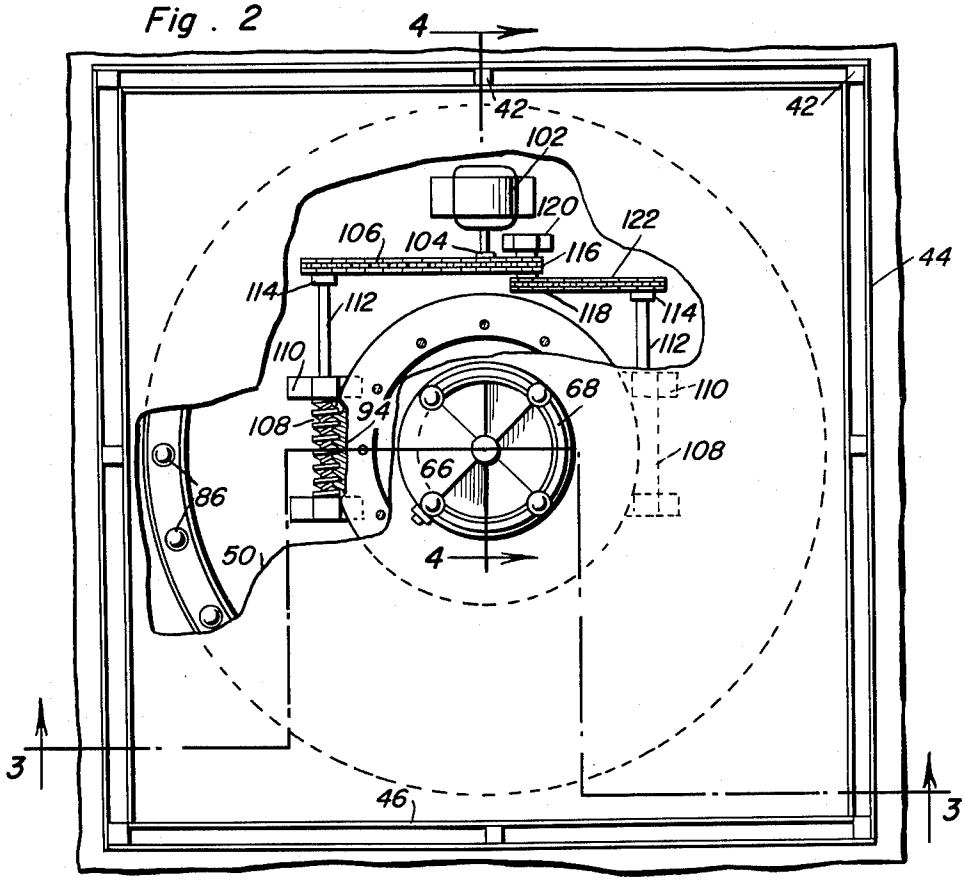
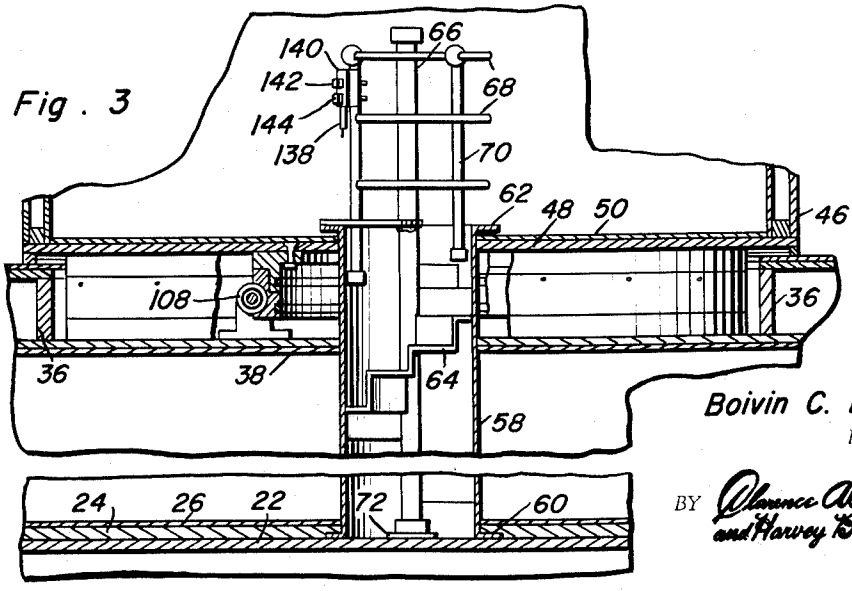


Fig. 3



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REVOLVING LIVING ROOM

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This invention relates in general to building structures, and more particularly to a house construction having a rotatable upper story.

In conventional house construction, it is common practice to employ a large picture window in the living room thereof. However, it is usually impossible to provide a living room picture window which is so located as to satisfy all desired conditions. For example, in the wintertime it is desirable that the picture window face south so as to receive the sun and in the summertime it is desirable that the picture window face north for avoiding the sun. The most ideal condition would be for the picture window to be movable so that it would face the sun during all periods of the winter and would be away from the sun during all periods of the summer. It is also desirable to have the picture window as well as the room containing the window movable in all directions so as to obtain the optimum view of the surrounding scenery.

It is therefore a primary object of this invention to provide an improved house which includes a room rotatably mounted with respect to the remainder of the house and on the top thereof in order that the room and its window or windows may be selectively positioned as desired.

Another object of the invention is to provide a house which includes a lower unit including all of the normal rooms of a residential home and having a roof assembly supporting an upper unit whereby the upper unit is mounted on the roof for rotation about a vertical axis and is provided with power means for rotating the upper unit.

Yet another object of the invention is to provide an improved building structure which includes a lower unit having mounted thereon for rotation an upper unit, the upper unit being communicated with the lower unit by means of a central stairway and the stairway carrying the necessary connections for providing heat and electricity to the upper unit from the lower unit.

It is another object of the invention to provide a building structure having a stationary lower unit and a rotatable upper story which includes improved power driven drive means for rotating the upper structure, an improved seal between the upper story and lower unit and is provided with novel rotating means for rotatably supporting the upper story on the lower unit.

It is yet another object of the invention to provide a two story house which has all the conventional rooms of a residential building on the first floor except the living room, and the living room is rotatably mounted on top of the other rooms thereby insuring that people are not constantly tracking through the living room and due to the unusual location of the living room it is always clean and airy.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of a completed house utilizing the revolving living room;

FIGURE 2 is a plan view of the revolving living room with the roof and a portion of the floor removed;

FIGURE 3 is a vertical cross-sectional view taken substantially on the plane of line 3—3 in FIGURE 2; and

FIGURE 4 is an enlarged vertical cross-sectional view

taken substantially on the plane of line 4—4 in FIGURE 2.

As illustrated in the drawings, a residential house or home 10 includes a lower story 12 and an upper story 14 rotatably mounted on a vertical axis extending through the central portion of the lower story. As illustrated, each of the stories are of rectangular box-like shape.

As illustrated, the lower story 12 is of brick construction and includes a front wall 16 parallel to a similar rear wall and two end walls 18 connecting the ends of the front and rear walls. The walls 16 and 18 are supported on a rectangular foundation 20 which encloses a concrete slab 22. The concrete slab 22 serves as a support for subflooring 24 and finished flooring 26. The walls of the lower story are provided with conventional windows 28 and 30, and the front wall 16 is provided with an entrance foyer 32 having an entrance door 34.

Conventional ceiling joists extend horizontally between the upper portions of the outside walls of the lower story as shown at 36. The joists 36 support a conventional finished ceiling structure 38 adjacent their lower surfaces and a flat waterproof roof 40 adjacent their upper surfaces.

Except for the living room, the lower story 12 includes all the conventional rooms of a residential home such as bedrooms, bathrooms, kitchen, dining room, etc. The living room is contained in the upper story 14.

The upper story 14 is preferably composed of conventional wooden construction for lightness and includes a plurality of vertical studs 42 covered on their exterior surfaces by sheathing 44 such as clapboards and covered on their interior surfaces by conventional wall materials 46 such as plaster. As shown in FIGURE 4, the upper story 14 has a flat subfloor 48 covered by a finished floor 50. The subfloor 48 is of rectangular construction and has a plurality of sills 52 extending around its peripheral upper surface and connected thereto so as to support the studs 42. The floor 48 may be of a slab contruction or if desired it could be of frame construction and composed of a plurality of spaced horizontal floor joists. A conventional hip roof 54 is supported on the upper ends of the studs 42. The front of the upper story or living room 14 is provided with a conventional picture window which may comprise a pair of sliding glass doors 56 so as to permit access to the roof 40 whereby the roof may function as an elevated patio or balcony.

A vertically extending hollow cylinder 58 is provided with a bottom flange 60 secured to the slab 22 and the cylinder extends upwardly through circular bores in the ceiling 38 and floor structure 48, 50. The upper end of the cylinder 58 has a horizontal circular flange 62 which overlaps the finished floor 50. A spiral stairway 64 is mounted within the cylinder 58 and is secured to a vertical center post 66 concentric with the cylinder 58. The bottom of the stairway 64 terminates adjacent a doorway in one side of the bottom of the cylinder 58. A guard rail structure comprising arcuate members 64 and posts 70 is secured to the top of the cylinder 58 and extends upwardly therefrom and surrounds a major portion of the upper end of the cylinder. The upper end of the stairway 64 terminates adjacent an opening in the guard rail. The bottom of the post 66 is provided with a circular base 72 secured to the slab 22.

The upper story 14 is rotatably supported on the roof and ceiling structure of the lower story 12 by means of a large annular anti-friction bearing 74. Ceiling 38 includes a relatively strong and rigid sub-ceiling 76 coated with a finished ceiling 78. The sub-ceiling 76 is secured to the joists 36. Bearing 74 includes a relatively large annular pair of races 80 and 82 secured to the sub-floor 48 and sub-ceiling 76 respectively by conventional means such as screws 84. The races 80 and 82 as shown in

FIGURE 4 are provided with opposing hardened annular faces of concave cross section. A plurality of ball bearings 86 are provided between the opposing faces of the races and maintained in proper spaced relationship by an annular spacer ring 88 which has a plurality of equally spaced bores therethrough receiving the ball bearings 86. Annular seals 90 and 92 are provided in recesses in the races 80 and 82 as shown in FIGURE 4 and effectively seal the ball bearings 86 between the races.

A ring gear 94 surrounds the upper end of the cylinder 58 and is secured to the underside of the sub-floor 48 by means of a support ring 96 composed of insulating material. Support ring 96 has a radially inwardly directed flange 98 secured to the sub-floor 48 by nut and bolt assemblies 100.

An electric motor 102 is mounted on the sub-ceiling 76 within the bearing 74 and its drive shaft is provided with a chain sprocket 104 which drivingly engages a link chain 106. A pair of worm gears 108 are rotatably mounted by means of conventional pillow blocks 110 on the sub-ceiling 76 and are integrally secured to shafts 112 each of which has a sprocket 114 secured to its free end. A pair of sprockets 116 and 118 are secured in spaced relationship on a shaft rotatably mounted in a pillow block 120 secured to the sub-ceiling 76. Chain 106 is encircled around the sprockets 114 and 116, and as explained above is in driving engagement with the chain sprocket 104 connected to the drive shaft of motor 102. A chain 122 is encircled around the sprockets 114 and 118.

A pair of vertically spaced conductor rings 124 are secured within annular recesses in the inner surface of the support ring 96 and are connected by conductors 126 to a plurality of outlet receptacles 128 mounted in the floor or wall of the living room 14.

Electric power or current is supplied to the rings 124 by means of a brush assembly 130 which comprises a housing 132 slidably supporting radially extending brush arms 134 which are urged radially outwardly by springs, not shown, within the housing 132. The outer ends of the arms 134 terminate in yokes which rotatably support rollers 136 which roll on the inner surfaces of the conductor rings 124. The brushes and the motor 102 are connected to the conventional fuse box or power control box of the house by means of a cable, not shown. Motor 102 is connected by a cable 138 to a control box 140 having a pair of push buttons 142 and 144. Push buttons 142 and 144 operate switches within the box 140 so as to operate the motor 102 in opposite directions.

The housing 132 for supporting the brushes may be mounted on a junction box 148 connected to the fuse or main power box of the house by a cable 146. Junction box 148 supplies current to the brush arms 134 and to the motor control switches 142 and 144 which in turn supply current to the motor 102.

The space between the outer edge of the sub-floor 48 and the roof 40 is sealed by weather-stripping comprising a pair of annular resilient rings 150 and 152 secured to the roof and sub-floor respectively, and having parallel cantilevered flanges resiliently urged into contact with one another.

Easy access may be gained to the living room 14 merely by going through the entrance door 34 and up the stairway 64 in cylinder 58. The living room 14 may be rotated in either direction merely by pushing one of the selector buttons 142 or 144. As long as the buttons are

maintained depressed, the living room is rotated in the desired direction for properly orientating the picture window thereof. Regardless of the position of the living room, electric current is always supplied thereto through the brush arms 134, the rollers 136, conductor rings 124, conductors 126 and outlets 128. It is contemplated that ample heat will be supplied to the living room by circulation of air through the cylinder 58 from the unit 12. However, if desired, additional heat may be supplied by plugging in electric heaters to the receptacles 128. Since the upper story 14 comprises the living room, it is not necessary to supply sewage and water facilities thereto. This results in a substantial saving since obviously it would be extremely difficult and complicated to provide mechanisms for supplying sewage and water facilities to the upper story while it is rotating.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In a building structure having an upper story rotatably mounted on a lower story, means for rotatably supporting and driving said upper story on a vertical axis comprising a large annular anti-friction bearing including a pair of opposing annular races one of which is secured to the floor of the upper story for rotation therewith about said vertical axis and the other being stationarily secured to the ceiling of the lower story, a plurality of ball bearings disposed between opposing faces of said races, a hollow ring gear concentric with said vertical axis secured to said floor and terminating in gear teeth disposed intermediate said vertical axis and said bearing races, motor means mounted on said ceiling intermediate the ring gear and said bearing races, a worm gear on opposite sides of said ring gear in driving engagement therewith, chain and sprocket means connecting said motor to said worm gears and an annular weather seal between said stories concentric with said axis adjacent the bearing.

2. The structure of claim 1 wherein electrical means are provided for supplying electrical energy to the upper story including a plurality of vertically spaced conductor rings secured within annular recesses formed in the hollow gear, outlet receptacles on the floor of the upper story connected by conductors through the ring gear to the conductor rings, a stationary brush assembly mounted adjacent the vertical axis having radially extending brush arms terminating in rollers in rolling engagement with said conductor rings and a supply of electrical energy connected to said brush assembly.

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