Sept. 2, 1958 W. W. GOODEY, JR., ET AL 2,849,729

ROTATABLY ADJUSTABLE CIRCULAR BED

Filed Nov. 16, 1956 4 Sheets-Sheet 1

FIG. 1

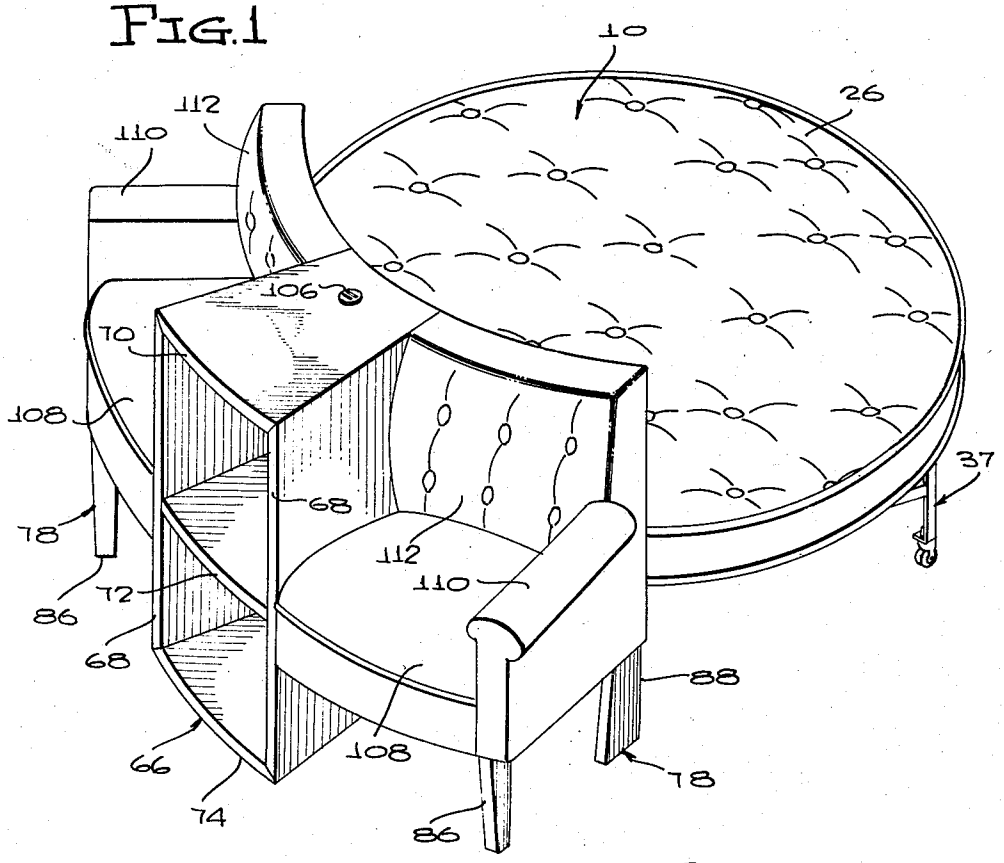
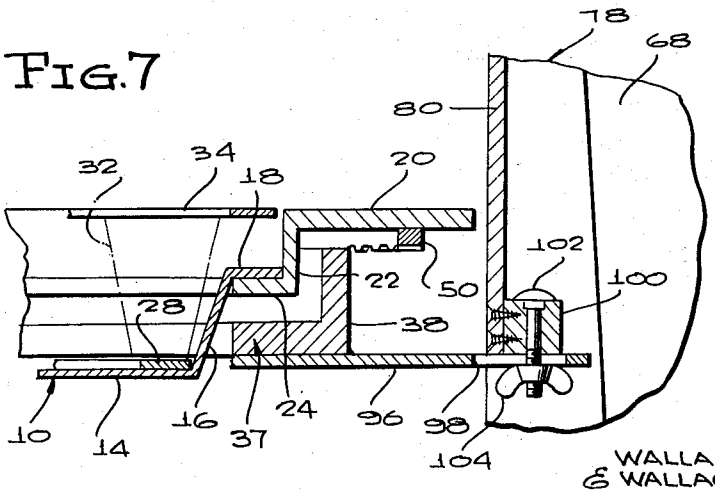


FIG. 7



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ROTATABLY ADJUSTABLE CIRCULAR BED

Filed Nov. 16, 1956 4 Sheets-Sheet 2

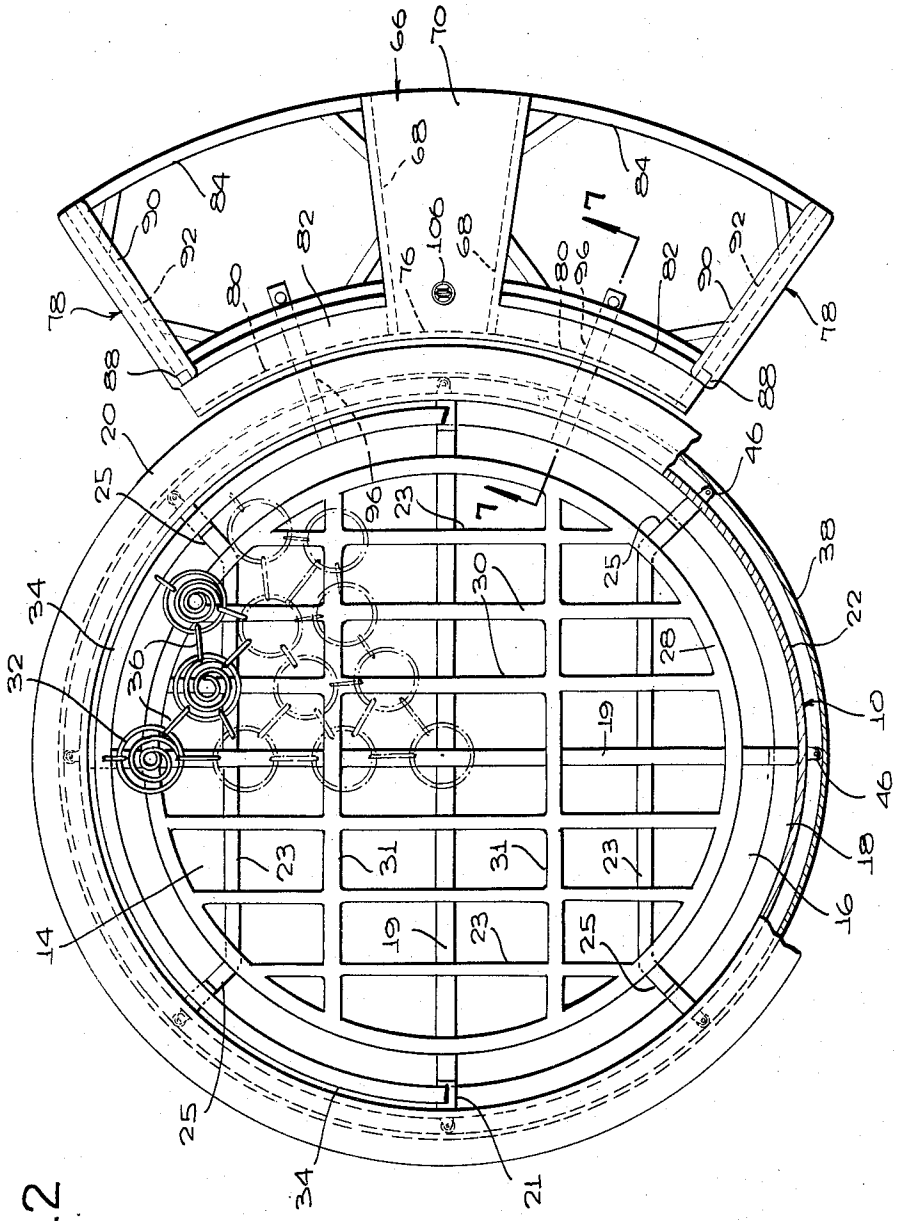

FIG. 2

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ROTATABLY ADJUSTABLE CIRCULAR BED

Filed Nov. 16, 1956 4 Sheets-Sheet 3

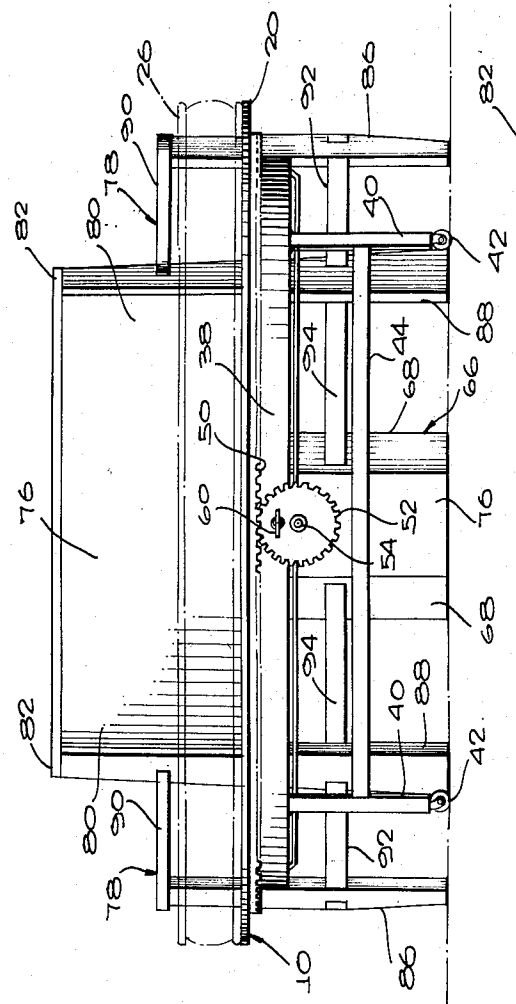

FIG. 3

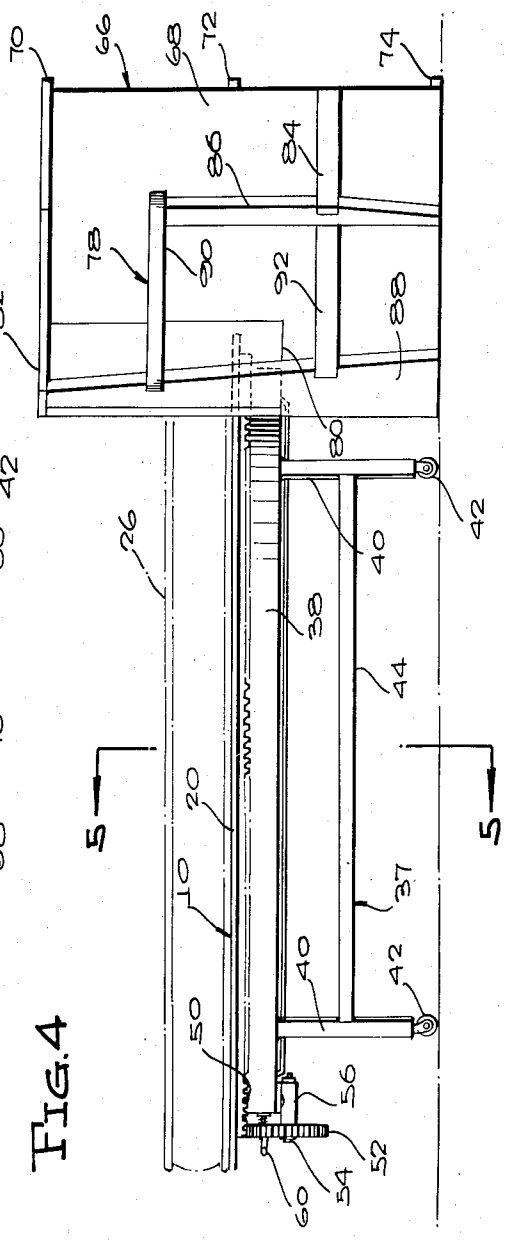

FIG. 4

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ROTATABLY ADJUSTABLE CIRCULAR BED

Filed Nov. 16, 1956 4 Sheets-Sheet 4

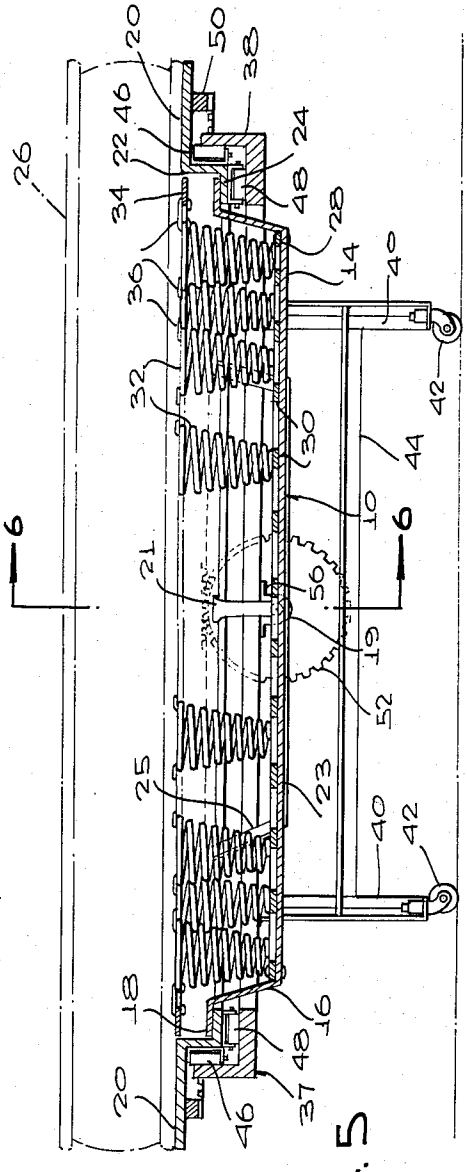

FIG. 5

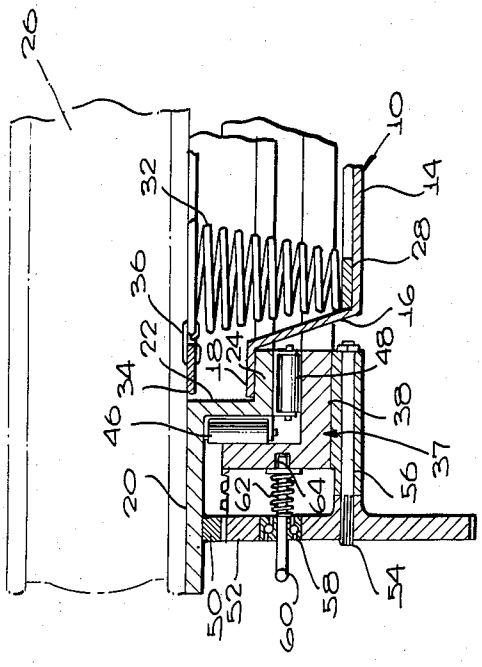

FIG. 6

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ROTATABLY ADJUSTABLE CIRCULAR BED

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Application November 16, 1956, Serial No. 622,631

4 Claims. (Cl. 5—2)

This invention relates generally to articles of furniture. More particularly, the invention is a bed wherein the mattress, springs, and associated support frames are circularly shaped and are rotatably adjustable in an annular main frame to which is secured a stationary headboard assembly.

Conventional beds, whether single or double, have a disadvantage in that the person or persons resting thereon tend to sleep on the same portion of the mattress, at all times. The fact that the mattress supports the person at the same location, throughout the life of the mattress, tends to break the mattress down at such location, over a period of time, causing a depression therein and thus eventually ending the useful life of the mattress and/or the associated bed springs.

For the purpose of prolonging the life of the mattress, it is customary, at periodic intervals, to turn the mattress over. However, this does not do more than alleviate the problem to a relatively inconsequential extent, at best, in view of the fact that the person will still be supported upon the same area of the mattress. In addition to turning over a mattress, one may turn the mattress end for end, but even so, the weight of the person is still concentrated in an area which, throughout the time the mattress is in use, does not in actuality change to any material degree.

Apart from the above, the changing of the mattress end for end or side for side is resorted to for the purpose of airing out surfaces of the mattress that may previously have been exposed, and further, the changing of the mattress in the manner described tends to prevent any particular portion of the mattress from becoming soiled to an extent greater than other portions thereof.

The changing of a mattress in the manner described is, however, an inconvenient and time consuming operation and in fact, requires a certain amount of strength, making it difficult for the housewife to perform the described operation.

Apart from the above, the ordinary rectangular bed is so designed as to be disposed with either its side or one of its ends against a wall, and this has the disadvantage that the sleeper may be exposed to drafts, which tend to travel across corners or along a wall surface. Obviously, one may eliminate this by moving the bed into the center of a room, but a conventional bed is so designed as to be unsightly when so located, and further, takes up an excessive amount of space. The requirements of a conventional rectangular bed as to the taking up of space to an excessive degree persists, in fact, even when the bed is disposed with its end or side against a wall, and the usual bed tends to eliminate employment of the room in which it is located for any purposes other than as a bedroom.

The object of the present invention is to provide a bed which has been summarized briefly in the initial paragraph of the application, which bed will eliminate several deficiencies noted above. By providing a bed, the springs and mattress of which are rotatably adjustable relative

to a stationary headboard, it becomes possible to turn the bed a few degrees each day, at the time the bed is made. Persons tend to always sleep in the same direction, within a room, and hence, it will be seen that with one always sleeping in the same direction, that is, with his head adjacent the headboard and the body extending straight outwardly from the headboard, and with the bed being rotatably adjusted in the manner described each day through a few degrees, a fresh area of the mattress will be disposed under the user each time the bed is slept in. Such area of the mattress and spring will not have previously been similarly located for a substantial period of time, that is, the bed must be turned through a full 360-degree cycle before any area of the mattress is used again.

If, for example, a bed is turned approximately 20-degrees each day, it will be eighteen days from the time a particular area of the mattress and springs is in position supporting the user, to the time it is again in such position.

It, therefore, becomes apparent that a bed having the characteristics described will be so constructed that the springs and mattress will last far longer time than those of a conventional bed. Further, continuous aeration of the unused portions of the mattress is provided for, and still further, the changing of position of the mattress and springs is easily and swiftly effected, without requirement of lifting the mattress and turning it side for side or end for end, as has previously been required.

A further object is to provide a bed of the character stated, which will be so designed as to be useful in the center of a room, rather than along the wall. In this way, one can avoid drafts, and further, the bed becomes an article of furniture which will improve the appearance of the room as compared to a conventional bed, and will permit the room to be put to other uses, such as an ordinary living room, rather than be usable merely as a bedroom.

Another object is to provide a bed of the character stated that will be designed to be sturdier and more comfortable than a conventional bed, by reason of the particular shape thereof.

Still another object, in a preferred embodiment of the invention, is to provide a headboard assembly that will incorporate a night table and twin boudoir chairs, which are usable to advantage when two persons are using the room, as distinguished from arrangements often found in hotel rooms, motels, etc., wherein only a single chair is provided, requiring that a second person sit upon the bed.

A further object is to provide an article of furniture of the character described, which will be extremely attractive, so as to impart to the room a living room atmosphere, and will be adapted to be efficiently employed in commercial establishments, such as hotels, or for that matter, in efficiency apartments wherein a single room is required to serve both as a sleeping room and a living room.

Another object is to provide a bed as described which, although larger than present day rectangular beds, would allow more space within which one may move about any room, and would, in actuality, make the room appear to be larger.

Yet another object is to design the bed in such a manner as to facilitate its assembly and disassembly for storage and shipment.

Other objects and advantages of the present invention will become apparent from the following description when taken in conjunction with the annexed drawings, in which:

Figure 1 is a perspective view of an article of furniture according to the present invention;

Figure 2 is a top plan view thereof in which the mattress has been removed, the spring being illustrated only fragmentarily, the upholstery being removed from the twin chairs of the headboard assembly;

Figure 3 is an elevational view of the structure in which the mattress has been shown in dotted lines, the structure being shown as seen from the left of Figure 2, the upholstery being removed;

Figure 4 is a side elevational view of the structure as seen from the right of Figure 3, the mattress being shown in dotted lines and the upholstery being removed;

Figure 5 is a sectional view diametrically through the bed, substantially on line **5—5** of Figure 4;

Figure 6 is an enlarged, detail sectional view substantially on line **6—6** of Figure 5; and

Figure 7 is an enlarged, detail sectional view substantially on line **7—7** of Figure 2.

Referring to the drawings in detail, the combination piece of furniture constituting the present invention includes a circular assembly rotating in a horizontal plane which, since it constitutes the portion of the bed on which the user or users are supported, will be hereinafter termed a support assembly. This has been generally designated **10** in the several figures of the drawing and in its basic essentials comprises a circular support means for the springs and mattress, the bed springs, and the supported mattress.

The support means for the bed springs comprises a flat, horizontally disposed, circular plate **14**. Plate **14**, as best shown in Figure 5, is integrally formed with an upwardly directed peripheral flange **16** terminating at its upper edge in an outwardly directed, circumferentially extending lip **18**.

The support means for the springs and mattress further includes an annular mattress support ring **20** lying in a horizontal plane above the plane of lip **18** (see Figures 5 and 7), the planiform ring **20** being integral at its inner periphery with a depending flange **22** terminating at its lower edge in an inwardly directed, planiform lip **24** underlying and supporting the lip **18** of the flanged plate **14**.

The flanged plate **14** is removable from the ring **20**, to facilitate storage and shipment, and will rotate with the ring **20** when the bed is in use, in view of the weight imposed upon the flanged plate **14** tending to frictionally bind the lips **18**, **24** against each other.

A spring support frame is disposed within the dished plate **14**, below a mattress **26**, the marginal portion of which is supported upon the ring **20**. The spring support frame includes (see Figure 2), an annular ring **28** supported in contact with the top surface of the plate **14**, as shown in Figures 5 and 6. Integral with the rim **28** are parallel members **30**, intersecting with and made rigid with members **31** disposed perpendicularly to the length of the members **30**, as shown in Figure 2.

To reinforce the plate **14**, diametrically extending reinforcing bars **19** are disposed in perpendicular relation, crossing at the center of the plate **14**. At their ends the bars **19** are extended upwardly along the inner surface of the flange **16**, and then outwardly to overlie the lip **18**, said ends of the members **19** being designated at **21**.

Further, the mattress support means is reinforced by the provision of rectangularly arranged reinforcing members **23** cooperating to define a rectangular reinforcing frame. Extending outwardly from the corners of the rectangular reinforcing frame defined by members **23**, are support arms **25** which also extend up the flange **16** into positions overlying the lip **18**.

It may be noted that plate **14** and ring **20**, formed and arranged as described, cooperate to define the dished, circular plate assembly underlying and supporting the bed springs and mattress.

The bed springs will now be described, and constitute spirally shaped coils **32** secured at their lower ends to the bed spring support frame. At their larger upper ends the coils **32**, which are closely spaced apart over the full area of the bed springs, are coplanar with a ring member **34** (Figures 2, 5 and 6), to which the springs are tied by wire ties **36**. The ties **36** are also employed, as shown in Figure 2, to connect adjacent spring coils to one another.

All the components so far described are rotatably adjustable within an annular, relatively stationary main frame assembly, generally designated at **37**. This includes an annular support member **38**, of right angular cross section, as shown in Figures 5 and 7. Member **38** underlies the mattress support ring **20**, and fixedly secured to and extending downwardly from the under side of the members **38** at locations angularly spaced 90 degrees apart about the circumference thereof, are support legs **40** having fasteners **42** at their lower ends, the support legs being connected by rectangularly arranged braces **44**. Although casters are provided upon the member **38**, ordinarily said member would remain stationary, and the casters are only used when the entire bed, including the headboard assembly, is to be moved about a room for the purpose of, perhaps, changing the room arrangement.

Antifriction means is interposed between the member **38** and the mattress support ring **20**, to insure the free rotatable movement of the ring **20** upon member **38**. To this end, spaced uniformly about the circumference of the ring **20** are roller support brackets carrying vertically disposed rollers **46**, which roll upon the inner surface of the upwardly extending portion of the main frame member **38**.

Secured to the under side of the lip **24** of ring **20** are brackets carrying horizontally extending rollers **48**, these being uniformly spaced about the circumference of the ring **20** correspondingly to the spacing of the rollers **46**. The rollers **48** bear against the inwardly directed, horizontal portion of the member **38**, as shown to best advantage in Figure 6.

Fixedly secured to the under side of ring **20** inwardly a short distance from the periphery thereof, is an annular rack **50** extending continuously through the full circumference of the ring **20**, and formed throughout said circumference with outwardly facing teeth adapted to engage the teeth of an operating gear **52** disposed in a vertical plane. Gear **52** is splined or otherwise connected to a shaft **54** for rotation therewith, the shaft **54** being a stub shaft journaled in a bearing **56** fixedly mounted upon the under side of the member **38** in position extending radially outwardly from said main frame member **38**.

Means is provided for manually rotating the gear **52**, and for holding the same against rotation when the gear is not in use. To this end (see Figure 6), a ball bearing **54** is mounted in an opening formed in gear **52** in spaced relation to the axis of rotation of the gear. Extending through the inner race of the ball bearing is the shank of a handle **60**, said handle being axially slidable within the inner race of bearing **58** and extending through a compression spring **62** one end of which bears against the inner race of the ball bearing **58**, the other end bearing against a collar formed upon the inner end portion of the shank of the handle. The inner extremity of the handle shank extends into a recess **64** formed in the outer surface of the stationary main frame member **38**. The handle that projects outwardly from gear **52** thus is of the detent or spring biased plunger type, and it will be seen that when the handle is positioned, as in Figure 6, the gear **52** is locked against rotation. This in turn, by meshing of the teeth of said gear with the annular rack **50**, prevents rotatable movement of the support assembly **10** of the structure. When, however, it is desired to rotate the assembly **10**, one merely pulls outwardly upon the handle **60** to disengage the same from the recess **64**, against the restraint of the spring **62**. Then, by means of the handle, the gear **52** can be given

one or two full turns, thus causing the rotation, through a desired number of degrees, of the assembly 10.

Designated generally at 66 is the headboard assembly of the bed. This is fixedly connected to the main frame 37 and hence may be considered, together with the main frame 37, as a stationary structure.

At this point it is to be noted that the headboard assembly 66, while preferably having the appearance shown in Figure 1, need not necessarily have such appearance. The principles of the invention, wherein the portion of the bed that supports the person is circularly formed and is rotatably adjustable relative to the headboard assembly, can be carried out even though the particular headboard assembly may have an appearance different from that shown. It is not desired that protection for the invention be limited to a bed having the previously described principles of operation, but having only the particular ornamental design of the headboard assembly shown.

In any event, in the preferred embodiment, the headboard assembly includes, medially between its ends, a bookcase including vertically disposed side walls 68 lying in planes arranged radially of the axis of rotation of the support assembly 10. A horizontal top wall is provided on the bookcase, and a back wall 74 is also provided, together with a shelf 72 intermediate the top and bottom walls. These are all hingedly connected, and providing a back wall for the bookcase is an arcuate back plate 67, curving about the axis on which the support assembly 10 turns and disposed in close proximity to the inner periphery of the mattress support ring 20. The back plate includes not only a mid-length portion that provides a back wall for the book shelves, but also includes end portions 80 that project in opposite directions from the respectively opposite side walls of the book shelves as best shown in Figure 2.

The end portions 80 of the plate 76 provide back walls for chair frames, generally designated at 78. The chair frames include top rails 82 secured to the top edges of the end portions 80 of plate 76 and integral at their inner ends with the rear or inner end portions of the top wall 70 of the book shelves.

The chair frames also include seat support rails 84, which also curve about the center of the support assembly 10, as shown in Figure 2. The seat support rails 84 are in a common horizontal plane disposed a substantial distance below the plane of the top rails 82, and are rigid at their inner ends with the front edge portions of the side walls 68 of the book shelves. At their outer ends, the front seat rails 84 are fixedly secured to vertically disposed front standards 86 spaced radially outwardly of the circular main frame inner or rear standards 88. Standards 88 are secured at their upper ends to the outer ends of the top rails 82, and fixedly connected between the upper ends of the front or outer standards 86 and on the standards 88 are arm rests 90 disposed above outer side frame members 92 of the chair frames. Members 92 are fixedly connected between the intermediate portions of standards 86, 88, and project radially outwardly from the circular main frame and rotatably support assembly 10.

Suitable diagonal bracing is provided, wherever desired, in the chair frames and hence need not be described in detail herein. Further, the upholstery of the chair frames is well within the skill of those working in the art. It may be noted that to brace the backs of the chair frames, arcuate back rails 94, in a plane common to the front rails 84 (see Figure 3), are connected between the side walls of the book shelves 66 and the inner standards 88.

The entire headboard assembly is fixedly connected to the main frame assembly 37. To this end (see Figures 2 and 7), angularly spaced about the main frame assembly 37 are radially extending, horizontally disposed connecting bars 96. These are welded or otherwise fixedly secured at their inner ends to the main frame member 38, the outer ends of the connecting arms 96 having longitudinal slots 98 underlying blocks 100 that are secured to the back plate end portions 80. Blocks 100 have vertical openings receiving bolts 102, and wing nuts 104 are threaded on the bolts after extension of bolts through the slots 98. This arrangement permits the headboard assembly to be detachably connected to the main frame assembly, so that they can be disassembled for shipment or storage, if desired.

Further, various other details may be embodied in the construction and for example, one or more electrical outlets 106 can be mounted in the headboard assembly to permit electrical connections to be made for lamps, radios, etc.

As to the upholstering of the chairs, the boudoir chairs include upholstered seats 108, upholstered arms 110, and upholstered backs 112, the upholstery being applied to the chair frames in a manner well known in the upholstery art.

It will be seen that the construction is one in which the persons may always sleep in the same direction, with the headboard assembly providing at all times an indication as to the manner in which one may most comfortably arrange himself or herself upon the support assembly 10. In other words, the person or persons using the beds will tend to sleep with their heads adjacent the headboard assembly, with the headboard assembly thus being conveniently disposed to hold books or other articles. Many persons have the practice of reading in bed, and thus, when lying on the support assembly 10, in the manner previously described, they may read in comfort with the reading lamp or lamps plugged into the receptacle 106.

At the same time, the entire article of furniture is usable for purposes other than as a bed. The boudoir chairs, for example, permit use of the furniture piece as, in effect, a piece of living room furniture and it will be seen that the construction imparts a living room atmosphere to any room in which the bed is used. The bed would preferably be disposed outwardly from the walls of the room, thereby heightening the attractiveness of the room and giving it the mentioned living room atmosphere. At the same time, the bed, though in actuality larger than a conventional rectangular bed, permits more freedom of movement about the room, and further, supports the users where they will be out of drafts, etc.

The main characteristic of the invention, of course, resides in the adaptability for the mattress to be rotated relative to the stationary headboard assembly, so that continuous fresh portions of the mattress are in use, with each portion being used only at relatively infrequent intervals. This adds considerably to the life of the mattress, so that it remains firm, and without depressions formed therein, over a far longer period of time than is true of conventional mattresses not having the features of the invention. Wear upon the bed springs, both generally and upon particular areas thereof, is also reduced considerably, and aeration and exposure of the mattress to its maximum extent also results from the particular construction illustrated and described. All these changes, it may be noted, are made merely by pulling the handle 60 out of its normally engaged position, and rotating the gear 52 to any extent necessary.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor changes in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A bed comprising an annular main frame assembly; circular means mounted upon said assembly for rotation about a vertical axis and adapted for supporting a user, said circular means including a dished support plate assembly, spring means mounted within said support plate assembly, and a circular mattress supported upon the spring means; a stationary headboard assembly connected to the main frame assembly and extending along part of the circumference of the mattress, in a path curving about said axis; and means on the main frame assembly for rotating said dished support plate assembly said support plate assembly including a peripheral ledge lying in a horizontal plane, in supporting relation to the underside of the peripheral portion of the mattress, said underside lying wholly in said plane in contact at its center with the spring means.

2. A bed comprising an annular main frame assembly; circular means mounted upon said assembly for rotation about a vertical axis and adapted for supporting a user, said circular means including a dished support plate assembly, spring means mounted within said support plate assembly, and a circular mattress supported upon the spring means; a stationary headboard assembly connected to the main frame assembly and extending along part of the circumference of the mattress, in a path curving about said axis; and means on the main frame assembly for rotating said dished support plate assembly, the main frame assembly including a main plate member of annular shape, the circular support means including antifriction elements angularly spaced thereabout and interposed between the plate member and the dished support plate assembly said support plate assembly including a peirpheral ledge lying in a horizontal plane, in supporting relation to the underside of the peripheral portion of the mattress, said underside lying wholly in said plane in contact at its center with the spring means.

3. A bed comprising an annular main frame assembly; circular means mounted upon said assembly for rotation about a vertical axis and adapted for supporting a user, said circular means including a dished support plate assembly, spring means mounted within said support plate assembly, and a circular mattress supported upon the spring means; a stationary headboard assembly connected to the main frame assembly and extending along part of the circumference of the mattress, in a path curving about said axis; and means on the main frame assembly for rotating said dished support plate assembly, the main frame assembly including a main plate member of annular shape, the circular support means including antifriction elements angularly spaced thereabout and interposed between the plate member and the dished support plate assembly, said main frame assembly further including support legs angularly spaced about and fixedly secured to the main frame member said support plate assembly including a peripheral ledge lying in a horizontal plane, in supporting relation to the underside of the peripheral portion of the mattress, said underside lying wholly in said plane in contact at its center with the spring means.

4. A bed comprising an annular main frame assembly; circular means mounted upon said assembly for rotation about a vertical axis and adapted for supporting a user, said circular means including a dished support plate assembly, spring means connected within said support plate assembly, and a circular mattress supported upon the spring means; a stationary headboard assembly connected to the main frame assembly and extending along part of the circumference of the mattress, in a path curving about said axis; and means on the main frame assembly for rotating said dished support plate assembly, the main frame assembly including a main plate member of annular shape, the circular support means including antifriction elements angularly spaced thereabout and interposed between the plate member and the dished support plate assembly, said main frame assembly further including support legs angularly spaced about and fixedly secured to the main frame member, the dished support plate assembly including an annular mattress support ring having a downwardly offset, inwardly directed lip and a centrally recessed support plate formed with an outwardly directed circumferential lip seating upon the lip of the mattress support ring, said mattress being supported at its periphery upon the mattress support ring, said spring means being supported wholly upon the centrally recessed plate, the spring means having a top surface coplanar with the mattress support ring.

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