Nov. 13, 1934. G. W. GAIL 1,980,516

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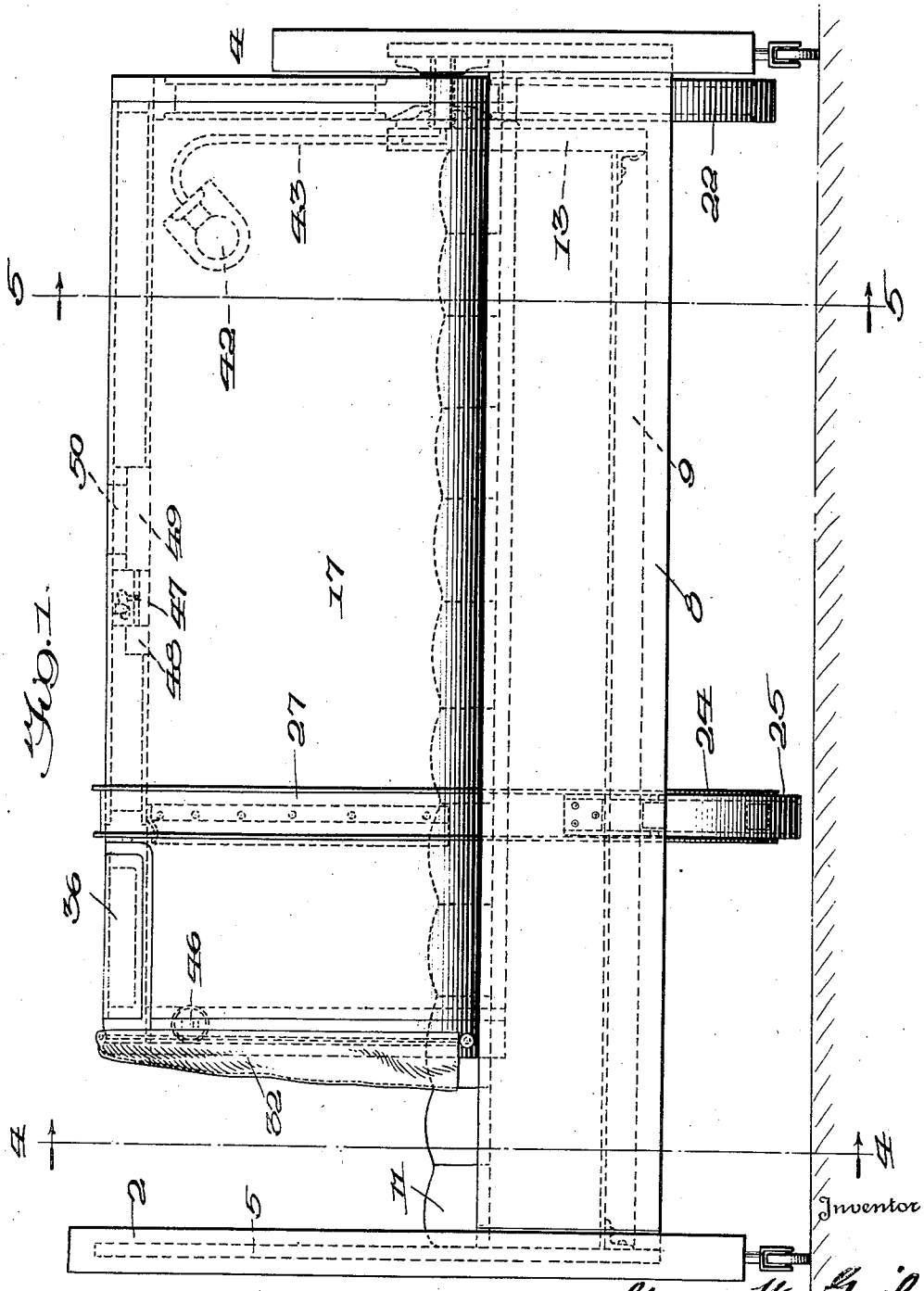


Fig. 1.

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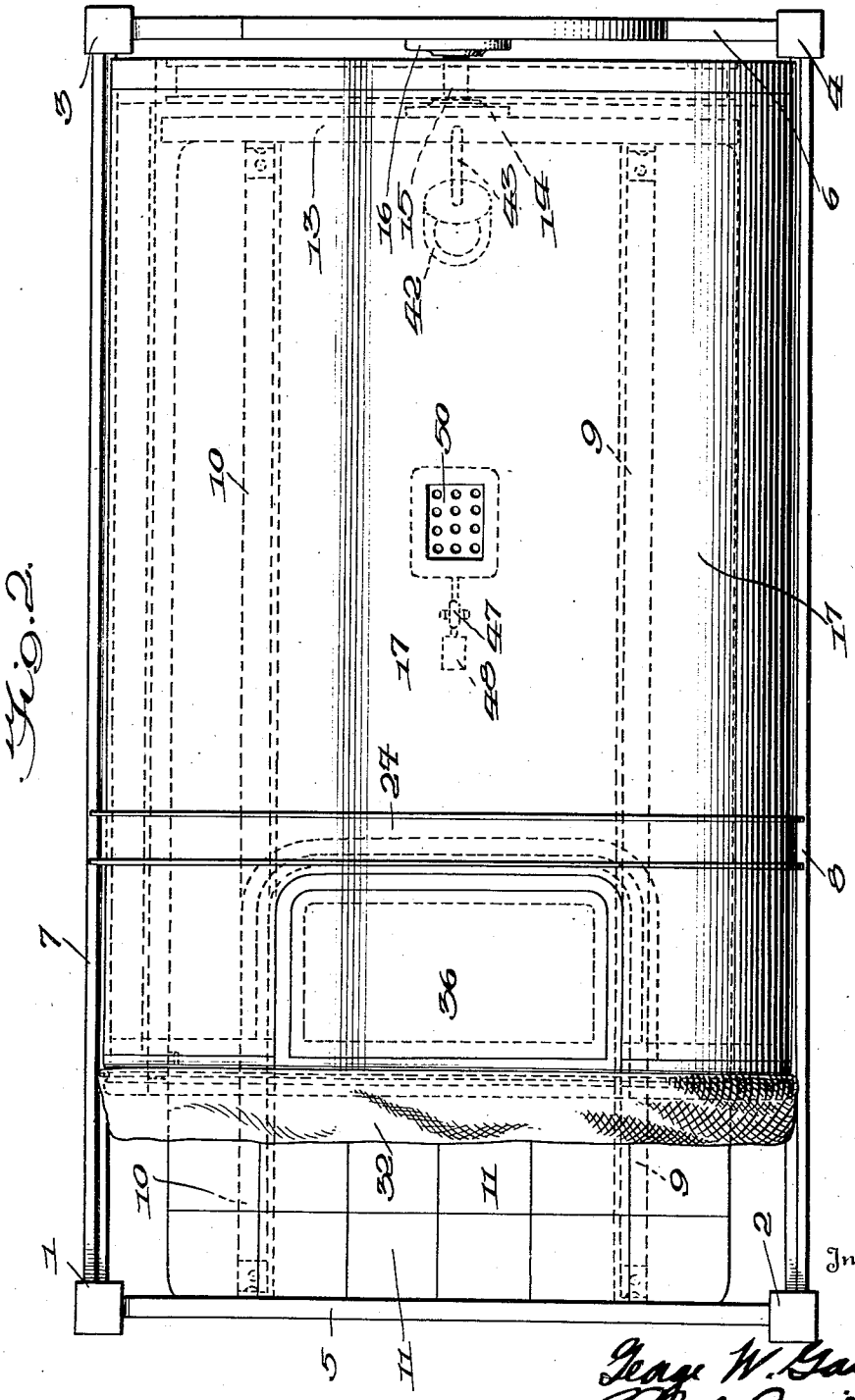
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Fig. 2.



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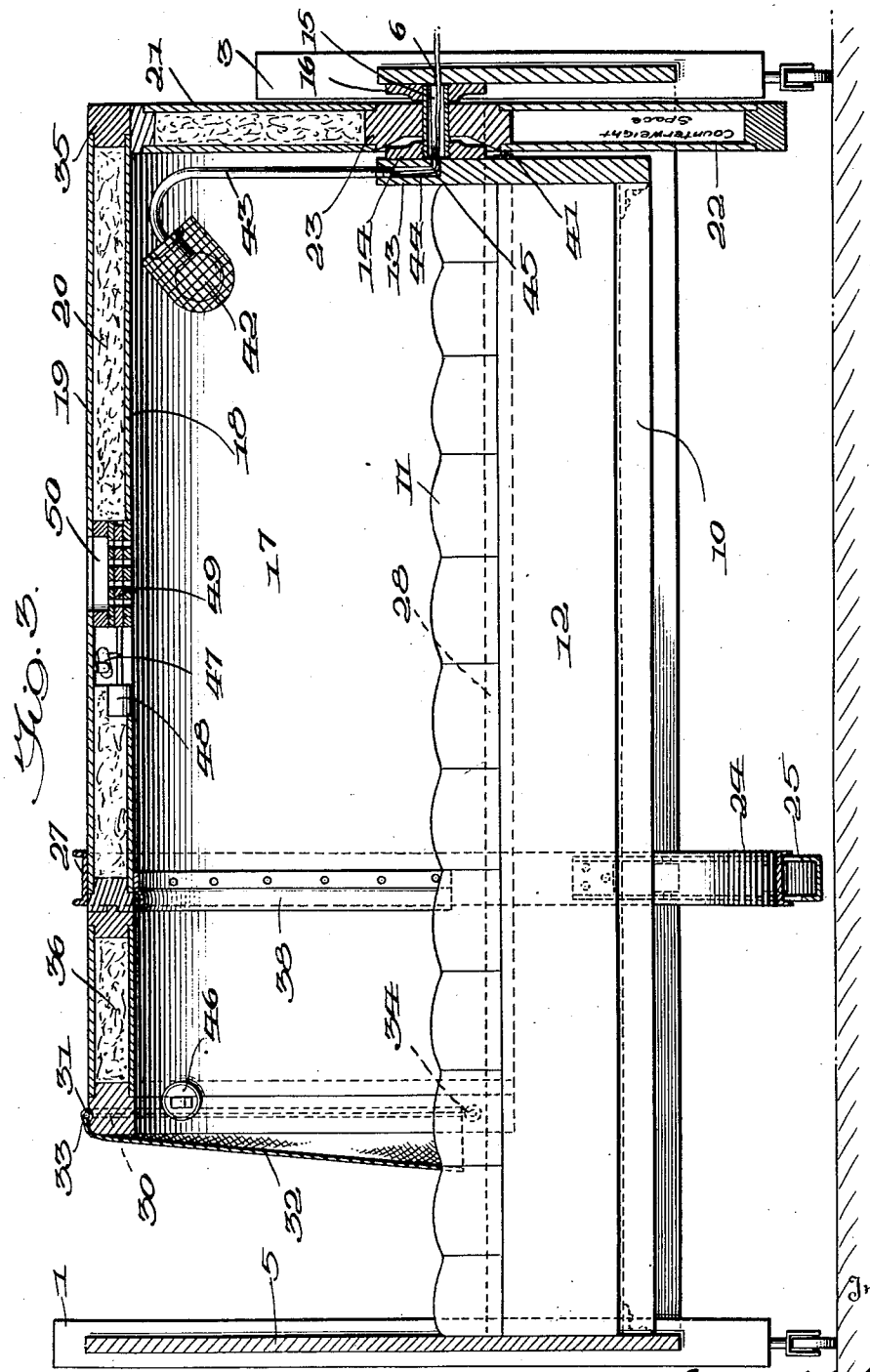


Fig. 3.

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Fig. 3.

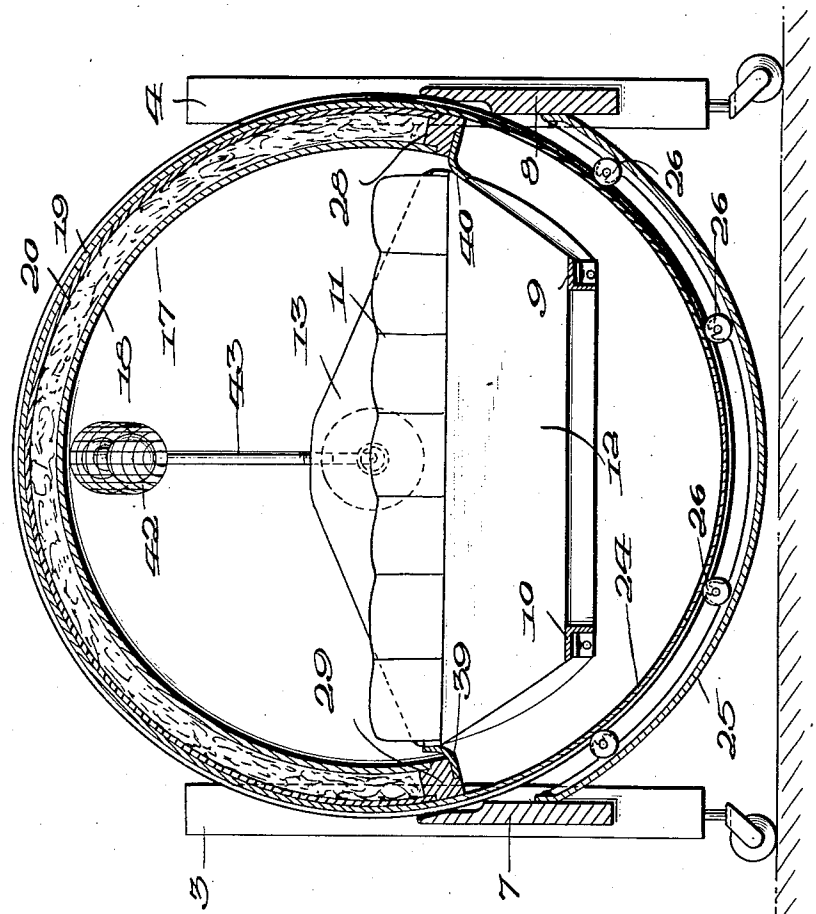
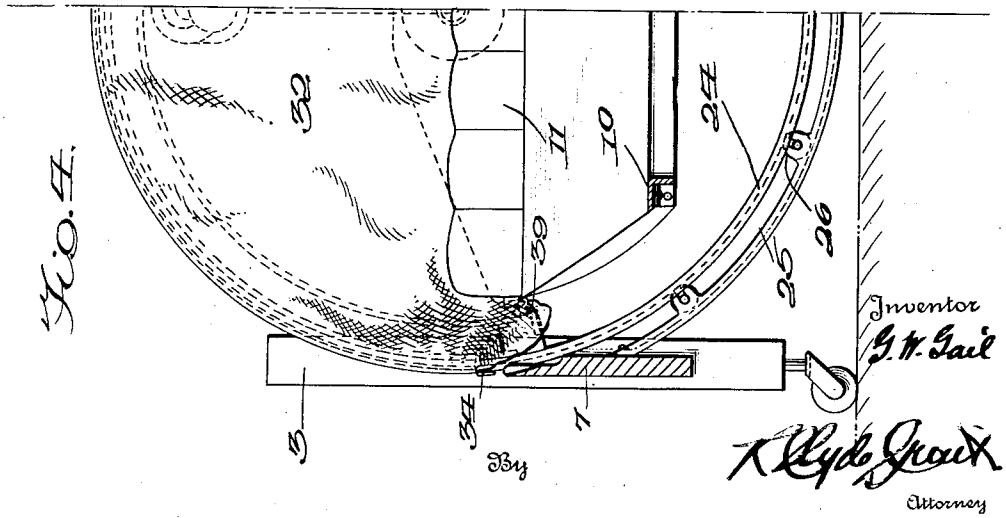


Fig. 4.



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UNITED STATES PATENT OFFICE

1,980,516

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George W. Gail, Ruxton, Md.

Application February 20, 1932, Serial No. 594,287

7 Claims. (Cl. 5—334)

This invention relates to certain improvements in beds and particularly to the same general type of bed as disclosed in my copending application Ser. No. 589,502, filed January 28, 1932.

The object of the present invention is to provide a novel construction of bed of this type wherein the same is greatly simplified and improved both as to construction and design and one that can be assembled at a minimum cost.

A further object resides in the production of a bed of the type indicated wherein the same can be easily operated or manipulated with the minimum effort.

A further object is the provision of a bed adapted to be converted by a single operation, from the conventional bed into one of the enclosed type.

Another object is to produce a bed of this convertible type which will not be unsightly in either of its adjusted positions and greatly improved as to strength and rigidity.

A still further object is to materially reduce the cubic content of the interior of the enclosure, whereby the same will be more easily and quickly heated, this being accomplished without reducing the available space necessary for the occupant.

Generally stated the invention comprises a bed, provided with a semi-cylindrical hood or enclosure of insulated construction, so mounted that when in operative position, in combination with the mattress, a completely insulated enclosure is provided for the occupant, said hood being shorter than the bed so that the head of the occupant will remain outside of the enclosure in the same manner as disclosed in the earlier application, aforesaid.

Like the structure in the copending application, the method involved in the use of the present bed construction, contemplates the use of the body heat of the occupant for heating the enclosure, the insulated enclosure adapted to retain the heat given off by the body of the occupant and to also exclude the outside or surrounding air. This enclosed bed is also provided with a flexible curtain at the open end of the enclosure, whereby the head of the occupant may remain outside of the enclosure.

Adjustable means are also provided for enlarging the available space between the open end of the enclosure and the head board of the main bed frame whereby the occupant will be able to sit up and read or the like before retiring, all of which will be hereinafter more fully described.

It is also contemplated in the present construction, like in applicant's former design of bed, to provide artificial heating means for initially heating the enclosure if desired, together with means for automatically controlling said heating means and the temperature within the enclosure.

The preferred embodiment of the invention is illustrated in the accompanying drawings in which

Fig. 1 is a view in side elevation, showing the enclosure in operative position;

Fig. 2 is a top plan view;

Fig. 3 is a view partly in side elevation and partly in section;

Fig. 4 is a partial transverse view in elevation; and

Fig. 5 is a transverse sectional view.

Referring to the drawings in detail the improved bed construction consists of a rectangular frame of the conventional type comprising corner posts 1, 2, 3, 4, head and foot boards 5 and 6 respectively and side rails 7 and 8, this frame being provided as usual with the customary casters or rollers.

Rigidly secured within this main frame is a mattress supporting frame comprising side rails 9 and 10, wherein the mattress 11 is adapted to be supported upon box springs or the like designated generally as 12. The forward end of the side rails 9 and 10 are secured directly to the head board 5 but for the reason as will hereinafter appear, other means had to be provided for securing the other ends of these side rails. Referring particularly to Fig. 3 these other ends just referred to are secured to a segmental supplemental or auxiliary foot piece 13. This foot piece 13 is provided with a flanged socket member or the like 14 into which is threaded a tubular member or journal 15, the other end of the member 15 being mounted in a similar flanged socket 16 secured to the foot board 6 so that the foot piece 13 will be spaced from the foot board 6 of the main frame for the reason to be hereinafter described.

Rotatably mounted in the main bed frame and in a position to encircle the mattress and mattress supporting springs and frame, is a substantially cylindrical or semi-cylindrical enclosure or the like 17, said housing being constructed of inner and outer spaced walls 18 and 19 respectively, the space between the walls containing a filling of insulating material 20 of any preferred character. This insulated enclosure 17 does not extend fully between the foot and head boards 5 and 6 respectively but as shown leaves an intervening space for the occupant's head during the operation of the device. This

enclosure 17 is provided with a closed end 21, said end section being made in the form of a substantially hollow disk, the upper half section of which being of the same double wall insulated construction as hereinbefore described. The lower half section 22 is also of double wall construction but not insulated, providing a space for receiving any suitable counterweight to partially counter-balance the enclosure. At the axis or center of this rear end or disk portion 21 is a hub or the like 23 whereby this end portion of the enclosure is rotatably supported and mounted on the journal or the like 15, said parts during the rotation of the enclosure being retained within the space provided by the foot board 6 and foot piece 13 supporting one end of the mattress, all of which is clearly shown in Fig. 3.

Adjacent the other end of the enclosure 17 and completely encircling said enclosure is a channel member 24 properly secured thereto, the inside radius of said channel member being the same as the outside radius of the enclosure. The lower half section of this circular channel member 24 in addition to supporting this end of the enclosure, to be hereinafter described, is also provided with the additional weight necessary, together with the weighted disk portion 22 of the closed end of the enclosure, to properly balance said enclosure so that the same can be easily rotated into and out of operative position. Positioned immediately below the lower half section of the circular member 24 of the enclosure is a channel member 25, the opposite ends of said channel member being secured to the inner faces of the side rails 7 and 8 of the main frame of the bed, see particularly Figs. 4 and 5. As hereinbefore stated, this channel member 25 is positioned immediately below the circular member 24 and interposed between these two members 24 and 25 are a series of rollers or the like 26, said rollers being journalled in the channel member 25 as clearly shown in Fig. 5. In the normal operative position of the bed with the enclosure positioned as shown in the drawings, this circular member 24 will circumferentially support this end of the enclosure. Upon rotating the enclosure and in its reverse position to that shown in the drawings, said enclosure will be supported by its double walled portion. In order to prevent any excessive wear or strain on these parts, the member 24 has been made continuous as shown, so that as the enclosure 17 is rotated, the upper half section of the circular channel member 24 will engage the supporting rollers 26 in an obvious manner.

In addition to the closed end 21 and the arcuate supporting member 24 the enclosure is provided with longitudinal members 28 and 29 and with an arcuate end member or the like 30, said member being at the open end of the enclosure as shown in Fig. 3, and the lower ends of this member are rigidly secured to the forward ends of the longitudinal members 28 and 29. The other ends of the longitudinal members 28 and 29 are secured to the solid portion 22 of the closed end 21 of the enclosure 17. The outer face of the member 30 is provided with a circumferential groove 31 for receiving one edge of a curtain 32, said curtain being for the purpose of closing this open end during the operation of the device. This curtain 32 is held in the groove 31 by an elastic band or the like 33 incorporated in the curtain at this edge, said band being secured at its opposite ends by any desired fastening 34.

As hereinbefore stated, the opposite end of the enclosure 17 is closed by a disk like member 21. This disk 21 may be constructed and secured in position in any improved manner but as shown in Fig. 3, said disk 21 is separately constructed and inserted within the proper end of the enclosure, the enclosure being constructed at this end in a manner similar to its front end with an arcuate or semi-circular rail or frame member 35.

Referring to Figs. 1, 2 and 3, with particular reference to Fig. 2, it will be noted that the upper open end portion of the enclosure is provided with a removable section or the like 36, said section having an interlocking and sliding engagement with respect to the adjacent portion of the enclosure. The outer face of this removable section is flush with the outer face of the enclosure so that it will not prevent the proper rotation or operation of the enclosure. This section is removable in order to obtain a greater clearance between the open end of the enclosure and the head board of the bed in the event that the occupant should desire to sit up in the bed for the purpose of reading or otherwise, the removable section 36 being conveniently used for a back rest at these times.

It also might be desirable to the occupant, while in a sitting position, to avail himself of the heat within the enclosure, and for this purpose there is provided an internally arranged ring like member 38 secured to the inner face of the enclosure, a distance in from the open end, substantially equal to the length of the slide or removable portion 36. This ring like member 38 is for the purpose of supporting an auxiliary curtain (not shown), said curtain being used at this time in place of the main curtain 32. It is of course to be understood that the same curtain can be used in either place, for obviously two separate curtains would not be used at the same time. Therefore a single curtain will serve both purposes by merely removing the curtain 32 from its groove 31 at the open end of the enclosure and draping it over the ring 38 within the enclosure, suitable means being provided for holding the curtain in place.

In order to further provide for the complete insulation of the enclosure 17 the longitudinal members 28 and 29 of the enclosure are provided with flexible strips or the like 39 and 40, said strips projecting inwardly and engaging the edges of the mattress or mattress support as shown in Fig. 5. In addition to this longitudinal sealing means there is provided a sealing strip 41 positioned between the foot piece 13 and the solid portion 22 of the rear end 21 of the enclosure, whereby this space between these parts at the foot of the bed will be properly sealed and closed. It is of course to be understood that this sealing strip 41 will be so mounted that it will not interfere with the proper rotation of the enclosure.

As in applicant's former construction of bed the present arrangement contemplates the initial heating of the enclosure by artificial heat, such as a lamp 42.

This lamp is mounted upon a hollow curved rod 43 properly secured in the stationary foot piece 13, said foot piece being provided with a passageway or the like 44, through which the necessary wires 45 for the lamp are conducted, said wires passing from the passageway 44 into and through the hollow journal 15 and from thence to the point of connection to the source of electric current (not shown). These wires 45

referred to, are in reality a compound insulated wire of well known construction. As will be apparent from Fig. 3, with this arrangement the enclosure 17 can be rotated without in any way disturbing the wiring 45.

This wiring 45 is appropriately mounted in circuit with a manually controlled switch 46 and a mercury tube switch 47. This mercury tube switch is automatically operated and controlled by a thermostat 48 preferably of the siphon-bellows type. This same siphon-bellows is connected to a slide valve or the like 49, said slide valve being positioned relative to an opening 50 formed in the top portion of the enclosure 17. This wiring circuit and the details of the automatic control feature are illustrated and described in detail in applicant's former application and it is thought unnecessary to give more than a general description of this part of the construction in the present application, except to say that all wiring will be safely insulated by a conduit, BX cable, or other suitable means, and most of this wiring can be concealed.

Like in the applicant's former case the siphon-bellows thermostat 48 in combination with the slide valve 49 and switch 47 will provide an automatic means for regulating and controlling the heat within the enclosure 17.

What is claimed is:

1. In a bed, the combination with a rectangular mattress supporting frame, of a semi-cylindrical insulated enclosure associated therewith, said enclosure terminating short of the head of the bed, and means for rotatably supporting the enclosure from the said rectangular frame, the foot end of said enclosure being pivotally supported at its axis of rotation and the other end being circumferentially supported from the sides of said frame.

2. In a bed, the combination with a rectangular mattress supporting frame, of a semi-cylindrical insulated enclosure associated therewith, said enclosure terminating short of the head of the bed, and means for rotatably supporting the enclosure from the said rectangular frame, the foot end of said enclosure being pivotally supported at its axis of rotation and the other end being circumferentially supported intermediate the ends of said enclosure.

3. In a bed, the combination with a rectangular main frame comprising corner posts, side rails and head and foot boards, of a semi-cylindrical insulated enclosure associated therewith, said enclosure terminating short of the head of the bed, means carried by the foot board of the main frame for pivotally supporting the foot end of the enclosure at its axis of rotation, and an encircling ring-like bearing member carried by said enclosure, and a cooperating arcuate member carried by the said side rails of the main frame intermediate the ends of the main frame for circumferentially supporting the other end of said enclosure.

4. In a bed, the combination with a rectangular main frame comprising corner posts, side rails and head and foot boards, of a semi-cylindrical insulated enclosure associated therewith, said enclosure terminating short of the head of the bed, means carried by the foot board of the main frame for pivotally supporting the foot end of the enclosure at its axis of rotation, an encircling member of channel form carried by said enclosure, a cooperating arcuate member of channel form carried by the said side rails intermediate the ends of the main frame, and anti-frictional means mounted between said channel members for circumferentially supporting the other end of said enclosure.

5. In a bed, the combination with a rectangular main frame comprising corner posts, side rails and head and foot boards, of a semi-cylindrical double walled enclosure terminating short of the head of the bed, a filling of insulating material between said walls, a concentrically positioned bearing carried by the foot end of said enclosure, an inwardly projecting journal member rigidly secured to said foot board projecting into said bearing, an arcuate member of channel form carried by the said rails intermediate the ends of the main frame, and anti-frictional means mounted within said channel, for circumferentially supporting the other end of said enclosure.

6. In a bed, the combination with a rectangular main frame comprising side rails and head and foot boards, of a semi-cylindrical insulated enclosure of less length than the main frame, said enclosure being provided with an open end and a closed end, means carried by the main frame for pivotally supporting the enclosure at its closed end adjacent the foot board of said main frame, means carried by the side rails intermediate the ends thereof for supporting the other end of the enclosure, a flexible curtain for the open end of said enclosure, and means for securing said curtain in a circumferential groove at the open end of the enclosure so as to permit the rotation of the enclosure without the removal of said curtain.

7. In a bed, the combination with a rectangular main frame provided with head and foot boards, of a rotatable semi-cylindrical insulated enclosure extending between said head and foot boards but of less length than the distance therebetween, said enclosure being provided with a closed end adjacent the foot board and an open end adjacent the head board, a substantially rectangular opening provided in the top wall of the enclosure at its open end, a removable section for said opening, means for securing a curtain at the said open end, and means for securing an auxiliary curtain within the enclosure beyond the inner edge of said opening.

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