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ADJUSTABLE NIGHT STAND AND BED TRAY

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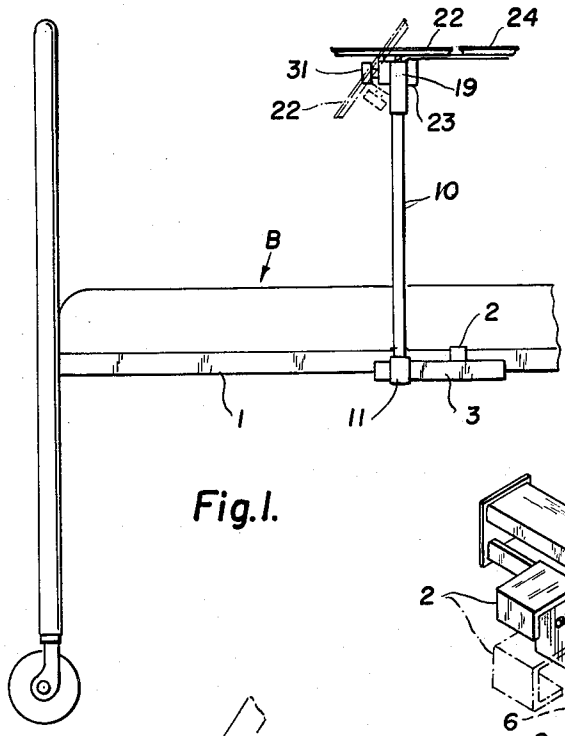


Fig. 1.

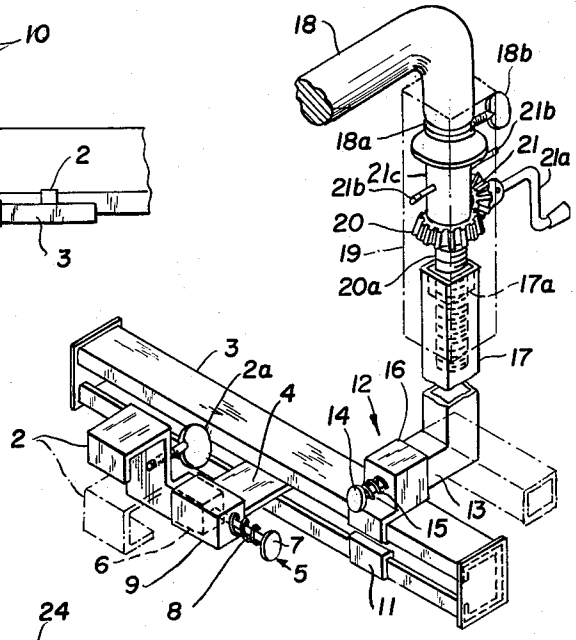


Fig. 2.

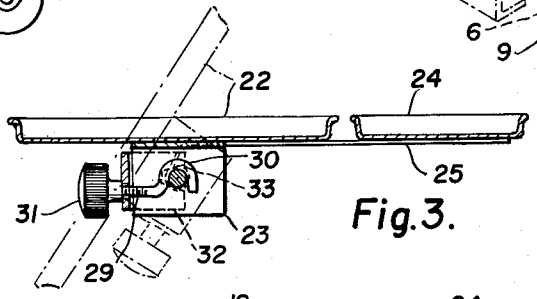


Fig. 3.

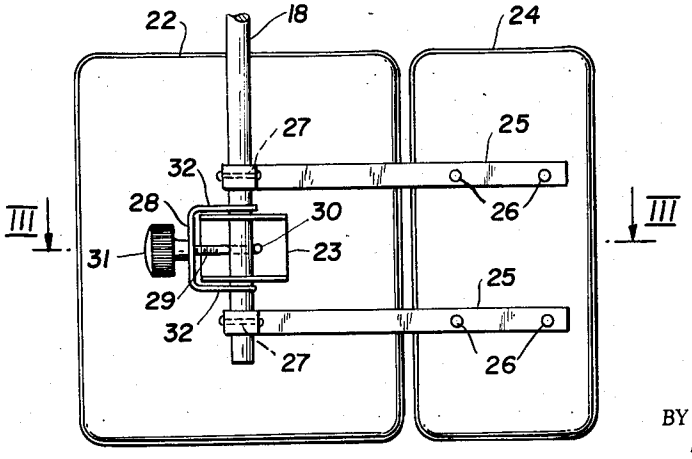


Fig. 4.

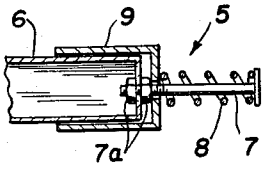


Fig. 5.

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ADJUSTABLE NIGHT STAND AND BED TRAY

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This invention relates to an adjustable bed tray and, more particularly, to detachable mounting means for providing slidable and pivotal adjustment for detachable supporting means for a bed tray so as to make the tray tiltable, as well as foldable underneath the bed, or behind the head or foot post, in selective storage positions.

An outstanding disadvantage of adjustable mounting means for bed trays as presently used is that they are relatively complicated in construction involving numerous and expensive parts and yet fail to provide sufficient adjustability to suit varying requirements by a bed patient, for example.

An object of the present invention is to provide novel mounting means for a bed tray to enable adjustment in height and in tilt of the bed tray, together with numerous additional adjustments, including slidable and rotatable adjustments of various parts of the tray supporting structure to enable sliding movement of the tray along the entire length of the bed and rotatable and collapsing movement of the parts of the supporting structure to enable folding of the tray alongside or underneath the bed or behind the head post or foot post.

Other objects and advantages will become more apparent from a study of the following description taken with the accompanying drawing wherein:

FIG. 1 is a fragmentary, elevational view of a bed equipped with a tray supporting means embodying my invention;

FIG. 2 is an enlarged, perspective view of the tray supporting means shown in FIG. 1;

FIG. 3 is an enlarged, cross-sectional view taken through lines III—III of FIG. 4;

FIG. 4 is a bottom view of the tray and part of the pivotal supporting structure thereof; and

FIG. 5 is an enlarged, longitudinal, cross-sectional view of the rotatably adjustable assembly 5 shown in FIG. 2.

Referring more particularly to FIGS. 1 and 2 of the drawing, numeral 1 denotes a side rail of a bed B, on which side rail is mounted a channel shaped clamp 2 which is longitudinally slidable along the length of the side rail 1 and which may be held in any selected longitudinal position by tightening of the wing nut 2*a* screw threadedly connected to a side flange of clamp 2. A channel shaped support post 3 is provided having closed off ends and being of substantially C-shaped cross section. Integrally connected to the center of the side flange thereof is a support flange 4 extending horizontally through the opening of post 3 and which is integrally connected to a rectangular tube 6. Telescopically fitted over tube 6 is a rectangular tube 9. The ends of telescoping tubes 6 and 9 are yieldably connected together by a spring 8 having one end which bears against the head of plunger 7 and the other end, against the outside surface of the end of tube 9. The inner end of plunger 7 is connected by nut 7*a* to the end of tube 6. This arrangement provides selective turning of tube 9 relative to tube 6 by 90° increments by merely sliding tube 9 out of telescoping relationship with tube 6 while compressing spring 8, and thereafter rotating tube 9 about the axis of plunger 7 in 90° increments until the desired relative position is obtained, and thereafter telescoping again tubes 6 and 9, thus giving any 90° adjustment over an angle of 360°. In FIG. 2 the dot and dash outline of clamp 2 shows the position of the clamp when rotated counterclockwise by an angle of 90°. Thus, support post 3 may be moved along either side of, or above or below clamp 2.

Longitudinally on support post 3 is a clamp 11 which may be held in any desired position along the length of post 3 by turning of a thumb screw (not shown), similar to 2*a*. Mounted on top of clamp 11 is another rotatable adjustment, denoted by numeral 12, comprising an outer tube 16 of rectangular cross-section and a telescoping inner rectangular tube 13 onto the end of which is secured a plunger 14 for holding a helical spring 15 such that tube 13 may be withdrawn from tube 16 out of telescoping engagement while compressing spring 15 and then rotated by 90° increments to any selected angular position, such as the one shown in the dot and dash outline, throughout an angle of 360°. Thus the vertical rectangular tube or post 10 mounted on clamp 11 may be moved either vertically upwardly or vertically downwardly or forwardly or rearwardly in parallel relationship with side rail 1.

Adjusting means are also provided for selectively adjusting the height of bed trays 22 and 24, as well as to enable swivel movement thereof in a horizontal plane, as well as tilting movement. Integrally secured to, and extending at right angles from tube 13 is a rectangular tube 17 having an internal threaded nut 17*a* rigidly secured inside the top portion thereof which is screw threaded at a threaded shank 20*a* which is rotated by cranking a crank 21*a* which drives through miter gears 20 and 21. Pins 21*b* which are integrally secured to diametrically opposite portions of a cylindrical tube 21*c* separate from shank 20*a* are connected to opposite walls of a telescoping rectangular tube 19 so as to effect lifting thereof as the result of cranking movement of crank 21*a*. Tray supporting rod 18 extending horizontally has an 90° vertical bend extending downwardly into tube 19 and which may be swiveled in any horizontal position and held in such position by tightening of a thumb screw 18 which engages a circular groove 18*a*. To the bottom end of rod 18 is secured a nut (not shown) whose head fits under a closure plate on top of the cylindrical tube 21*c*. Thus the rod 18 may be selectively lifted or lowered, or pivoted in a horizontal plane about the axis of threaded shank 20*a*.

A tilting adjustment is also provided for the trays which is more clearly illustrated in FIGS. 1, 3, and 4. To the bottom of tray 4 there is integrally secured by rivet or other fastening means 26, end portions of flexible metal straps 25. The other ends of straps 25 are connected to bearings 27. To the bottom surface of tray 22 is rigidly secured an inverted U-shaped bracket 23. Angular adjustment of the tray 22 relative to tray 24 as illustrated in dot and dash outline is obtained by unscrewing knob 31 from threaded shank 29 so as to loosen the hold of hook 30 on rod 18 and allow the pivotal mounting bracket to pivot about the connection between the legs 32 and rod 18. Thus a book may be placed on tray 22 for reading purposes while inclined, as shown in dot and dash outline, while tray 24 is held horizontally for supporting food or beverages.

Thus it will be seen that I have provided an efficient mounting means for a bed tray for enabling a wide range of adjustments including tilting, lifting and lowering movements of the tray, as well as slidable and pivotal movements, in increments of 90°, of various component parts of the mounting means, whereby the tray may be moved either alongside the bed, forwardly or rearwardly, or so as to fit behind the bed post or foot post, or to enable pivotal movement of the entire mounting assembly underneath the bed, out of sight.

While I have illustrated and described a single specific embodiment of my invention, it will be understood that this is by way of illustration only, and that various changes

and modifications may be made within the contemplation of my invention and within the scope of the following claims.

I claim:

1. For use with a bed having side rails, mounting means including a clamp slidably mounted on one of said side rails, a support post extending in close parallel relationship with one of said side rails, means for adjustably rotating said post relative to said clamp in angular increments of 90° so that it may be positioned on the side of, or above or below said clamp, comprising telescoping flat sided tubes including spring means for yieldably holding the ends of the tubes together in telescoping relationship, whereby upon removing of one of the tubes from telescoping relationship against the action of said spring, said support post may be rotated in increments of 90° and the tubes thereafter re-telescoped in the newly selected angular position.

2. Apparatus as recited in claim 1 together with a second clamp slidably mounted on said support post and a tray supporting post adjustably mounted on the top of said clamp, including means for selectively rotating said tray supporting post relative to said second clamp through

increments of 90° including selectively telescoped, flat sided tubes whereby said tray supporting post may extend vertically upwardly or downwardly, or horizontally parallel to said support post.

3. Apparatus as recited in claim 2 together with means mounted on the top of said tray support post for adjusting the height thereof, and means for swiveling the tray in a plane at right angles to the axis of said tray supporting post.

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