

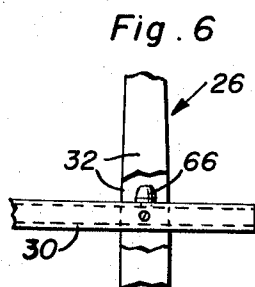
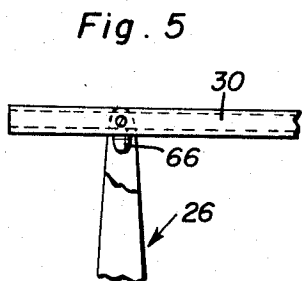
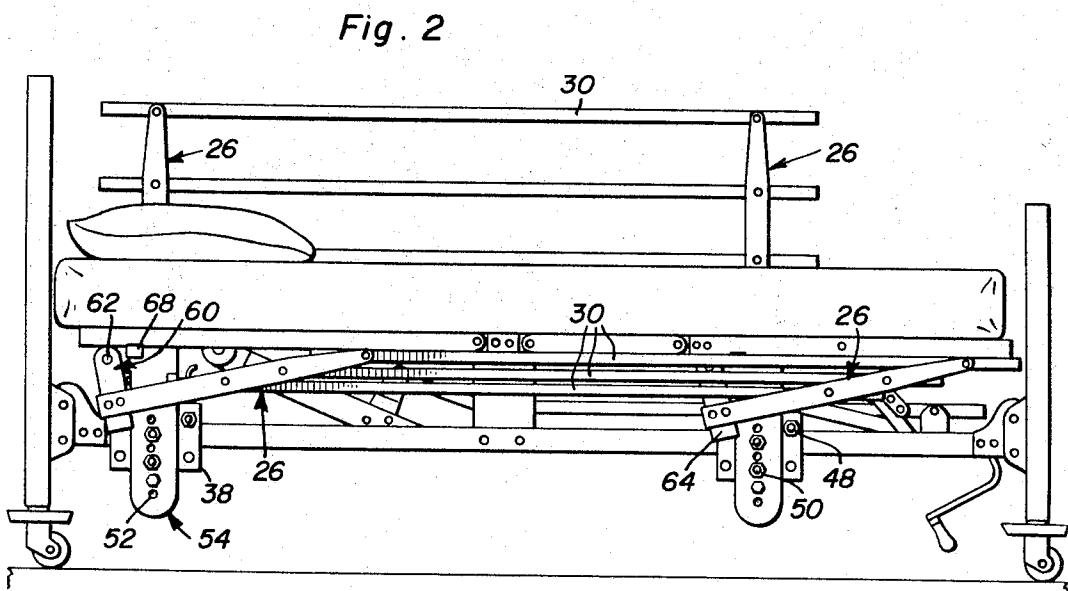
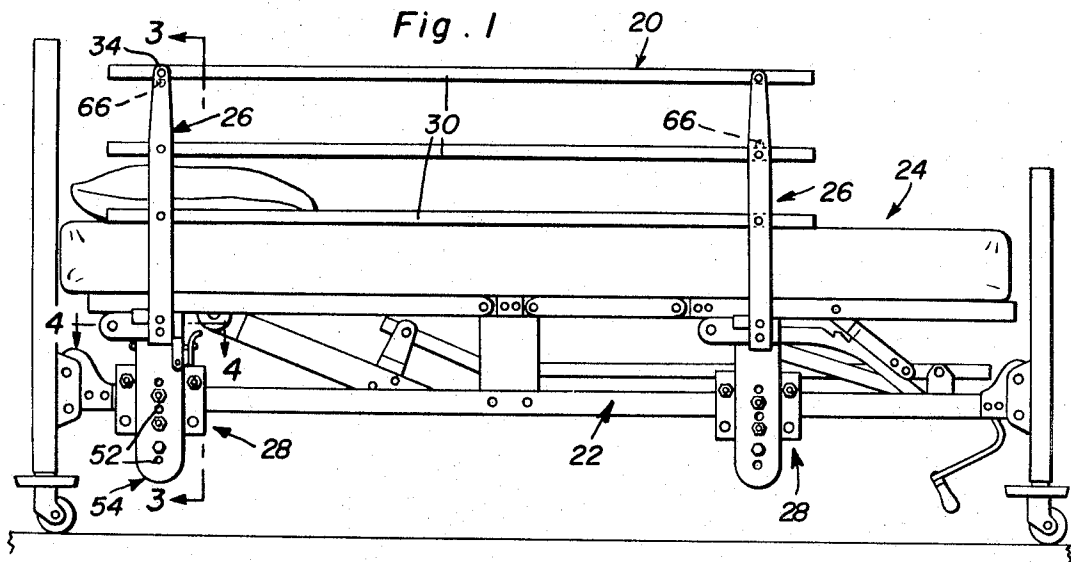
Aug. 22, 1967

H. E. TAYLOR
FOLDING BED GUARD

3,336,609

Filed Feb. 21, 1966

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 3

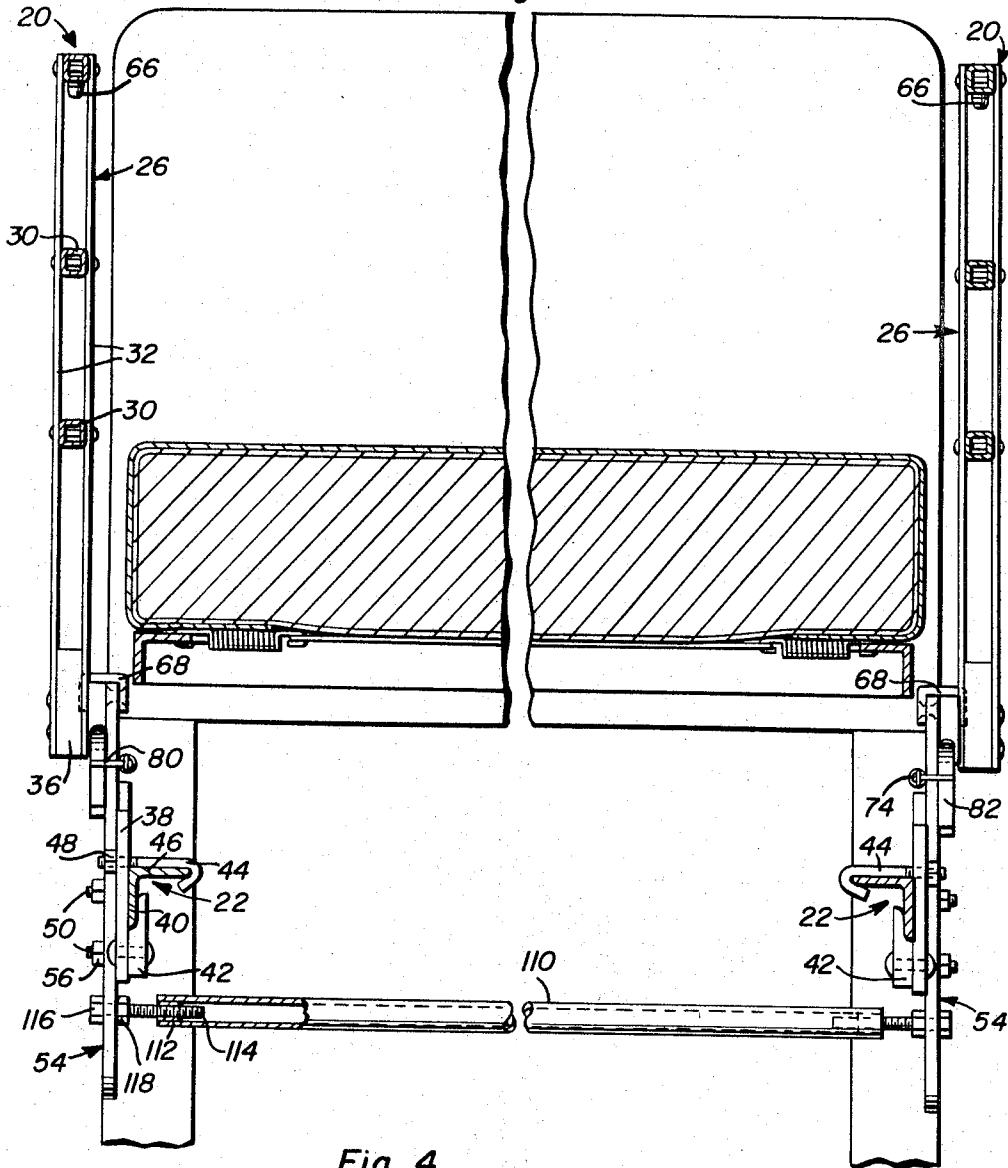
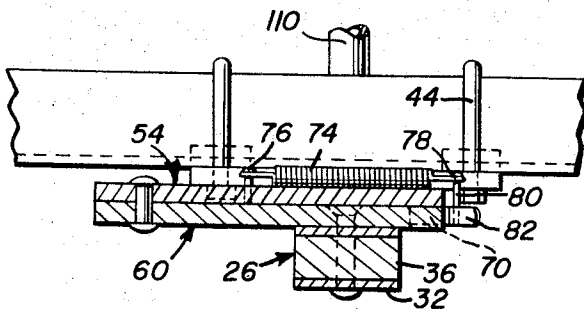


Fig. 4



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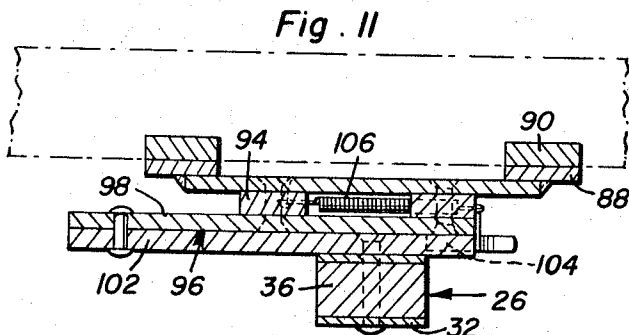
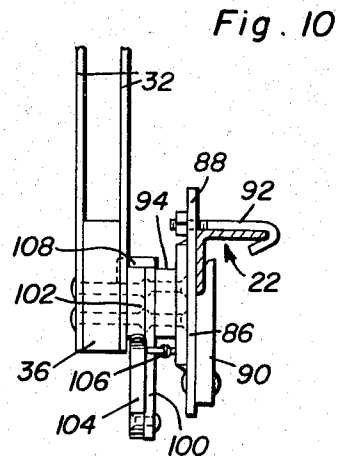
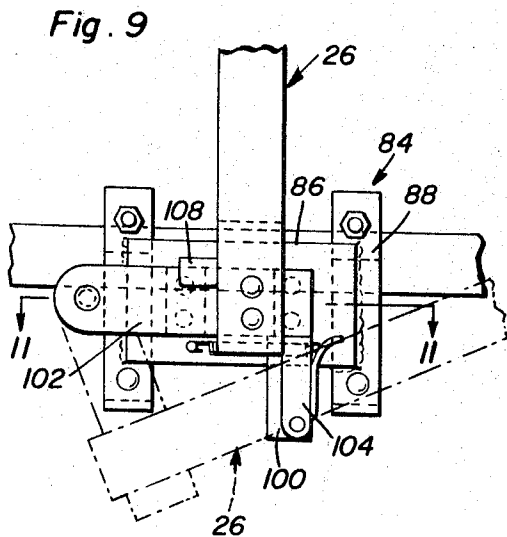
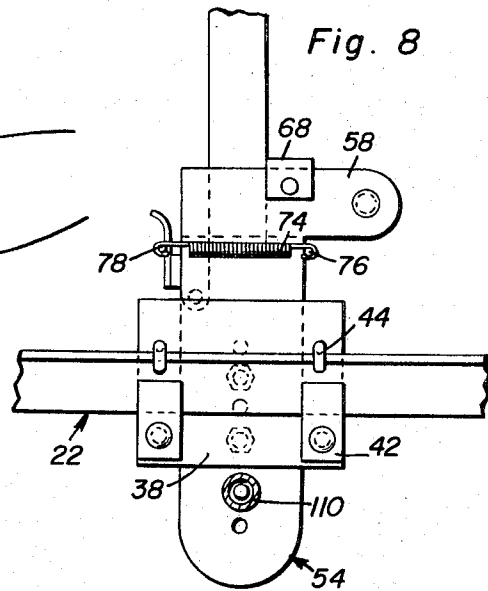
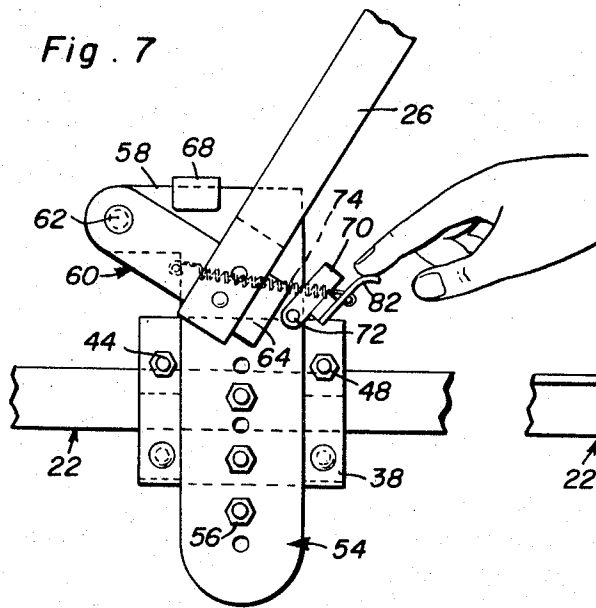
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FOLDING BED GUARD

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3 Sheets—Sheet 3



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3,336,609

FOLDING BED GUARD

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ABSTRACT OF THE DISCLOSURE

A bed guard mountable on the side of a bed and including spaced vertical posts and horizontal guard rails pivotally secured to the posts. The posts in turn are both pivotally mounted for swinging movement between a first upright retaining position and a second horizontal collapsed position below the mattress. The posts are mounted by laterally extending rigid bars fixed to the lower ends thereof and pivoted at the remote ends thereof whereby a swinging movement of the entire post about the pivoted remote ends of the bars is effected.

The instant invention relates to new and useful improvements in folding side guards for beds.

It is a primary object of the instant invention to provide a folding bed guard which can be alternately positioned so as to project above the sleeping surface of the bed in a manner so as to effectively retain an occupant of the bed thereon, and, in its folded position, be neatly compacted adjacent the side of the bed below the mattress so as to permit normal entry to or departure from the bed as well as unrestricted administration to a patient utilizing the bed.

It is also a highly significant object of the instant invention to provide a folding guard which is relatively simple in construction and operation and which incorporates features contemplated to safeguard both the occupant of the bed, normally a patient requiring care, and the attendant who will normally manipulate the guard. For example, the guard of the instant invention is to provide a smooth retaining face having no projections, exposed springs, or the like. In addition, specific means are provided so as to avoid any tendency for the manipulator of the guard pinching his fingers during a closing movement of the guard, this being a particularly significant problem in the more conventional folding guards.

Also, it is an important object of the instant invention to provide a bed guard which is stably mountable upon a bed, and more particularly the bed or side rail, without requiring any modification thereof.

Further, it is an object of the instant invention to provide a folding guard wherein the folding movement of the guard incorporates a combination vertical dropping and swinging of the guard so as to enable a utilization of the full height of the guard when unfolded, while at the same time enabling a compact storing of the folded guard below the mattress of the bed.

In addition, it is an object of the instant invention to provide a bed guard which is particularly adapted for use in combination with a second similar rail so as to enclose both sides of a bed.

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 side elevational view of a bed having the guard of the instant invention mounted thereon;

FIGURE 2 is a view similar to FIGURE 1 illustrating

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a bed having a guard on the near side thereof in its folded condition and a guard on the far side thereof in its unfolded condition;

FIGURE 3 is an enlarged transverse cross-sectional view taken substantially on a plane passing along line 3—3 in FIGURE 1 and illustrating a pair of guards on opposite sides of the bed;

FIGURE 4 is an enlarged cross-sectional detail taken substantially on a plane passing along line 4—4 in FIGURE 1;

FIGURES 5 and 6 are detail views illustrating the bumpers provided between the two uppermost guard rails so as to enable the accommodation of one's fingers therebetween when folding or opening the guard;

FIGURE 7 is an enlarged elevational view of the mount portion of the guard illustrating the manner in which a collapsing or folding of the guard is effected;

FIGURE 8 is an elevational view of the opposite side of the mount from that shown in FIGURE 7;

FIGURE 9 is an elevational view of a modified form of mount particularly adapted for beds with low springs;

FIGURE 10 is a side elevational view of the mount of FIGURE 9; and

FIGURE 11 is a horizontal cross-sectional view taken substantially on a plane passing along line 11—11 in FIGURE 9.

Referring now more specifically to the drawings, reference numeral 20 is used to generally designate the folding bed guard comprising the instant invention. As will be appreciated, this guard 20 is to be mounted on the bed or side rail 22 of a bed 24, either singly or in pairs.

The upper retaining portion of the guard 20 includes a pair of parallel posts 26 each pivotally mounted at the lower end thereof by a suitable mount assembly 28, and three elongated guard rails 30 positioned in vertically spaced parallel relation to each other, these rails 30 extending between and being pivotally engaged with the posts 26. Each of the posts 26 consists of a pair of spaced flat plates 32 having rounded upper ends 34 and receiving the square tubular rails 30 therebetween. The posts 26 are completed by the provision of a spacer 36 fixed between the lower ends of the post bars 32. With reference to FIGURES 1 and 2, it will be noted that the guard or guards 20 are to preferably be positioned adjacent the head of the bed with the two posts 26 being located inwardly of the extreme ends of the horizontal guard rails 30. These rails 30, in the unfolded position of the guard 20, extend along a major portion of the length of the bed, while at the same time also remaining within the confines of the length of the bed 24 upon a folding of the guard 20, this being achieved through the utilization of a unique mount assembly as shall be described presently.

Each of the mount assemblies 28, one associated with each post 26, includes a mounting plate 38 vertically positionable against the vertical flange 40 of the bed rail 22 and rigidly clamped thereto by a pair of upwardly opening notched clamp blocks 42 which receive the lower portion of the vertical flange 40, and a pair of elongated J-bolts 44 which are received over the horizontal flange 46 of the rail 22 and which include adjustable locking nuts 48 accessible from the outer side of the mounting plate 38. The forward or outer face of the mounting plate 38 is provided, between the spaced cooperating blocks 42 and bolts 44, with a pair of vertically aligned outwardly projecting mounting studs 50 which are in turn received through a selected pair of the vertically aligned series of holes 52 appearing in the vertically elongated extension plate 54 which, through the threaded studs 50 and the nuts 56 threaded thereon, is to be bolted to the outer face of the mounting plate 38 in a vertically

adjusted position. As will be appreciated, the purpose of the extension plate 54 is to accommodate the guard 20 to beds of various heights.

An integral laterally projecting coplanar extension 58 is provided on the upper end of the extension plate 54, this extension extending away from the direction of folding of the guard 20, in this instance towards the head of the bed. Overlying the upper portion of the extension plate 54, including the extension 58, is an elongated pivot plate or bar 60 which is pivotally engaged, through a suitable pivot pin 62, to the outer end of the extension 58 for movement in a vertical plane. This pivot plate 60 extends perpendicularly across the spacer rigidified lower end of the adjacent post 26 with the post 26 being rigidly fixed to the bar 60 inward of the free end thereof so as to leave a small projecting portion 64 on the pivot bar 60.

From the foregoing, it will be appreciated that the guard 20, in folding and unfolding, pivots about the two pivot pins 62 which are in fact positioned laterally of the posts 26 in the general plane of movement of the guard 20. In this manner, there is not only a pivotal folding of the guard 20, but also a vertical lowering of the entire unit, this in turn resulting in the provision of a guard 20 which combines a maximum unfolded or open height with a complete retraction of the guard below the mattress of the bed so as to allow free entry to and exit from the bed, as well as an unencumbered making of the bed. Also, in light of the general downward and forward movement of the entire guard 20 during the rearward folding thereof, it will be appreciated that a maximum length can be provided for the unfolded guard while still retaining the folded guard within the over-all length of the bed 24. Incidentally, in order to facilitate the manipulation of the guard 20 a pair of vertically projecting bumpers or stops 66 are provided on the two uppermost rails 30 so as to limit the movement of these two rails 30 toward each other and thereby prevent a pinching of the fingers of anyone manipulating the guard 20, this manipulation normally being accomplished by merely grasping the uppermost guard rail 30 and moving the guard 20 in the desired direction. With reference to FIGURES 1, 5 and 6, it will be noted that these bumpers 66 are provided between the post bars 32 with the upper rail bumper 66 depending within the post 26 adjacent the head of the bed and with the intermediate rail bumper 66 projecting upwardly within the post 26 toward the foot of the bed. In this manner, the bumpers 66 will be normally concealed when the guard 20 is in its erected or unfolded position. It will of course be appreciated that the bumper 66 will limit the collapsing movement of the entire guard 20, however, inasmuch as the space to be provided by the bumpers 66 for the accommodation of the fingers will normally only be on the order of approximately one inch, this will not interfere with the effective collapsing of the guard 20 and the positioning of the guard in an out-of-the-way position below the mattress.

In order to limit the movement of the guard 20 from the folded to the unfolded position a stop member 68 is provided on each of the mount assemblies 28. This stop unit 68 consists of a downwardly opening U-shaped member having a first leg thereof rigidly affixed to the extension plate 54 adjacent the extension 58 thereon with this member 68 overlying the forward face of the extension plate 54 at the upper edge thereof in a manner so as to define a downwardly opening pocket for the reception of the upper edge of the pivot bar or plate 60 as this bar 60 pivots upwardly upon an opening of the guard 20. The bight portion of the stop member 68 is engaged against by the upper edge of the pivot bar 60 as the bar 60 assumes a horizontal position, the post 26 at the same time being orientated vertically and the guard 20 being completely unfolded.

In order to retain the guard 20 in its open or unfolded

position, one of the mounting assemblies 28 is provided with a releasable latch 70. The latch 70 is pivotally secured to the outer side of the extension plate 54 immediately below and in vertical alignment with the projecting portion 64 of the horizontally orientated pivot bar 60. The lower edge of this projecting portion 64, when the bar 60 is horizontally positioned, rests on the upper end of the latch 70 with this engagement between the latch and projecting portion 64 being in vertical alignment with the latch pivot pin 72 whereby a positive stop or rest is provided so as to prevent pivotal movement of the bar 60 and consequently a collapse of the guard 20. The latch 70 is spring-biased into its vertical guard supporting position by means of an elongated coiled spring 74 positioned in a concealed manner behind the extension plate 54 and fixed at a first end 76 thereof to the extension plate 54 and at the second end 78 thereof to a laterally projecting rigid pin 80 fixed to and extending rearwardly of the handle 82 which is in turn fixed to the side of the latch 70 for enabling the control thereof by means of one or more fingers as illustrated in FIGURE 7.

From the foregoing, it will be appreciated that when the guard 20 is to be lowered, the latch 70 is pivoted, against the biasing force of the spring 74, away from the projecting portion 64 of the pivot bar 60, after which the upper rail 30 of the guard 20 is grasped and the bar pivoted and lowered into its folded position. When it becomes desirable to raise the guard 20, one need merely grasp the upper rail 30 and pivot the guard 20 upwardly, the projecting portion 64 of the pivot bar 60 engaging against the side of the latch 70 opposite from the handle 82 and automatically moving the latch 70 outward against the force of the spring until the projecting portion 64 clears the latch 70 at which time the spring 74 brings the latch 70 back into its guard-retaining position below the projecting portion 64.

With reference to FIGURES 9, 10 and 11, it will be noted that a modified form of mount assembly 84 has been illustrated therein, this assembly 84, while providing for the operation of the guard 20 in the same manner as the mount 28, being substantially shallower for utilization in conjunction with shallow spring beds.

Basically, the mounting assembly 84 includes a flat mounting plate 86 welded to a pair of rigid vertical straps 88 which are in turn clamped to the bed rail 22 by notched clamping blocks 90 and threaded J-bolts 92 engageable under and over the rails 22. Fixed to the outer face of the mounting plate 86, and spaced outwardly therefrom by spacing blocks 94, is a second mounting plate 96 comprising a horizontal leg 98 and a vertical leg 100. The pivot plate or bar 102 is pivotally mounted at the outer end of the horizontal leg 98 of the plate 96, in the same manner that the pivot bar 60 is mounted on the extension 58 of the extension plate 54. The latch 104, similar in construction and operation to the latch 70, is in turn pivotally mounted to the lower end of the vertical leg 100 of the plate 96 for engagement with the end of the pivot bar 102 projecting beyond the post 26. It will be noted that the biasing spring 106 associated with the latch 104 is positioned behind the plate 96 and accommodated in the space provided by the spacer blocks 94. Also, as was the case with the assembly 28, a suitable downwardly opening stop 108 is fixed to the plate 96 for limiting the unfolding movement of the guard 20 to the vertical position illustrated in FIGURE 1.

Referring again to FIGURE 3, attention is directed to the fact that the guards 20 of the instant invention are particularly adapted for use in pairs, one on each side of the bed 24. When used in this manner, the guards 20 are preferably braced and interlocked by a pair of transversely extending brace bars 110. These brace bars 110 are in the form of rigid elongated hollow tubes, each having internally threaded plugged ends 112 which adjustably receive, in each instance, an elongated threaded bolt 114 which is in turn locked, through the bolt head

116 and an adjustable nut 118, to the adjacent mounting assembly. In the case of the mounting assembly 28, the bolt 114 can be received through and clamped within one of the extension plate apertures 52.

From the foregoing, it will be appreciated that a unique folding guard has been defined, this guard incorporating all of the desirable features of simplicity of construction, rigidity in its erected position, compactness in its folded position and capability of being easily manipulated and positioned. Basically, the guard is so constructed and mounted as to provide for a maximum length and height in its erected or unfolded position while still retaining the folded guard within the longitudinal confines of the bed and below the mattress so as to not interfere with the use of the bed in the manner of a conventional bed. This has been made possible through a mounting of the collapsible portion of the guard 20 in a manner whereby the guard rails and posts, as a unit, move downwardly and toward the head of the bed while the individual elements fold forwardly toward the foot of the bed.

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. A folding side guard for beds comprising a pair of spaced bed engaging mounts, a pair of parallel posts, one associated with each mount, means pivotally engaging the lower end of each post with the corresponding mount, at least one guard rail extending between and being pivotally secured to said posts above the lower ends thereof, said posts, through said rail, being simultaneously movable between a first open vertical position and a second folded substantially horizontal position, said guard rail maintaining a generally horizontal orientation throughout the range of movement of said posts, stop means preventing movement of said posts beyond said vertical position when moving from said second position to said vertical position, and positioning means for releasably fixing said posts in the vertical position, said positioning means including a movable latch mounted on one of said mounts, said latch being movable between a first position, operatively engaged with the corresponding post in its vertical position in a manner so as to prevent movement of said post, and thereby both posts, toward the second post position, and a second position remote from said corresponding post so as to allow for a pivotal movement thereof, and means for resiliently biasing said latch into its first position, said means pivotally engaging the lower end of each post with the corresponding mount comprising a pivot bar, said pivot bar being rigidly fixed to the lower end of the corresponding post and orientated perpendicularly thereacross so as to assume a horizontal position upon a positioning of the post in its vertical position, said pivot bar having a first end thereof positioned laterally of the post toward the side thereof opposite from the direction of movement of the post from the first post position to the second post position, and pivot pin means pivotally fixing the first end of the pivot bar to the mount for a pivotal swinging of the bar and post about the pin means.

2. The guard of claim 1 wherein said latch, in its first position, is engageable with the bottom of the horizontally positioned pivot bar in spaced relation to the pivot pin means so as to prevent a downward pivoting of the bar, said latch, in its second position, being positioned outward of said bar so as to enable the free swinging of the bar past said latch.

3. The guard of claim 2 wherein said latch is pivotally mounted on the mount below the bar adjacent the second end thereof, said latch, in its first position, being ver-

tically orientated with the upper end thereof engaged under the bar at the second end of the bar, the upper end of said latch being pivotally movable longitudinally outward of said bar.

4. The guard of claim 3 wherein each mount includes a mounting plate, clamp means on said mounting plate for releasably locking said mounting plate to the side rail of a bed, a vertically orientated extension plate, said extension plate being vertically adjustable along said mounting plate, and means for releasably fixing said extension plate to said mounting plate in an adjusted position, said pivot bar being pivotally fixed to said extension plate.

5. The guard of claim 4 including a plurality of parallel vertically spaced guard rails pivotally engaged between said posts, and vertically projecting stop means on selected ones of said guard rails engageable with others of the guard rails and limiting the vertical movement of the guard rails toward each other upon a folding of the guard.

6. A folding side guard for beds comprising a pair of spaced bed-engaging mounts, a pair of parallel posts, one associated with each mount, means pivotally engaging the lower end of each post with the corresponding mount, a plurality of parallel vertically spaced guard rails pivotally engaged between said posts, said posts, through said rails, being simultaneously movable between a first open vertical position and a second folded substantially horizontal position, said guard rails maintaining a generally horizontal orientation throughout the range of movement of said posts, vertically projecting stop means on selected ones of said guard rails engageable with others of the guard rails and limiting the vertical movement of the guard rails toward each other upon a folding of the guard and positioning means for releasably fixing said posts in the vertical position, said positioning means including a movable latch mounted on one of said mounts, said latch being movable between a first position, operatively engaged with the corresponding post in its vertical position in a manner so as to prevent movement of said post, and thereby both posts, toward the second post position, and a second position remote from said corresponding post so as to allow for a pivotal movement thereof, and means for resiliently biasing said latch into its first position.

7. A folding guard for beds comprising a pair of spaced vertical posts, a plurality of vertically spaced horizontal rails extending between said posts and being pivotally secured thereto so as to define a unit foldable in a vertical plane, a fixed post mount associated with the lower end of each post, and means engaged between the lower end of each post and a point on the corresponding mount laterally of the post and generally in said vertical plane of movement for enabling a movement of each post, in its entirety, from a vertical position downwardly around said point on the corresponding mount.

8. The guard of claim 7 wherein said means comprises a rigid bar associated with the lower end of each post, each bar being rigidly fixed to the corresponding post and projecting perpendicularly therefrom in said vertical plane, and means on the outer end of each bar pivotally mounting said bar on the corresponding mount.

9. The guard of claim 8 including latch means selectively engageable under at least one of said bars for preventing the downward pivotal movement thereof.

10. A pair of laterally spaced folding guards for beds, each of said guards comprising a pair of spaced bed engaging mounts, a vertical post associated with each mount, means mounting each post on the corresponding mount for rotational movement of the post about a point on said mount spaced laterally of the post, a plurality of rigid horizontal rails extending between and being pivotally secured to said posts for movement therewith, and brace means extending between and being rigidly fixed to corresponding mounts on the laterally spaced guards,

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said means mounting each post comprising, a rigid bar fixed to the post and projecting perpendicularly therefrom, the outer end of said bar being pivotally engaged with the corresponding mount, and latch means selectively introducible in the path of movement of the bar engaged with one mount of each guard for selectively preventing movement thereof and consequently movement of the post.

11. A folding guard for beds comprising a pair of spaced vertical posts, at least one horizontal rail extending between said posts and being pivotally secured thereto so as to define a unit foldable in a vertical plane, a fixed post mount associated with the lower end of each post, an a rigid member engaged between each post and a point on the corresponding mount laterally of the post and generally in the vertical plane of movement, and means pivotally securing the outer end of each rigid member on the corresponding mount for enabling a movement

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of each post, in its entirety, from a vertical position downwardly around the point of pivotal engagement of the outer end of the corresponding rigid member.

12. The guard of claim 11 including a plurality of parallel vertically spaced guard rails pivotally engaged between said posts, and vertically projecting stop means on selected ones of said guard rails engageable with others of the guard rails and limiting the vertical movement of the guard rails toward each other upon a folding of the guard.

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