

No. 886,622.

PATENTED MAY 5, 1908.

N. C. MERRILL.  
FOLDING BED.

APPLICATION FILED OCT. 3, 1906.

2 SHEETS—SHEET 1.

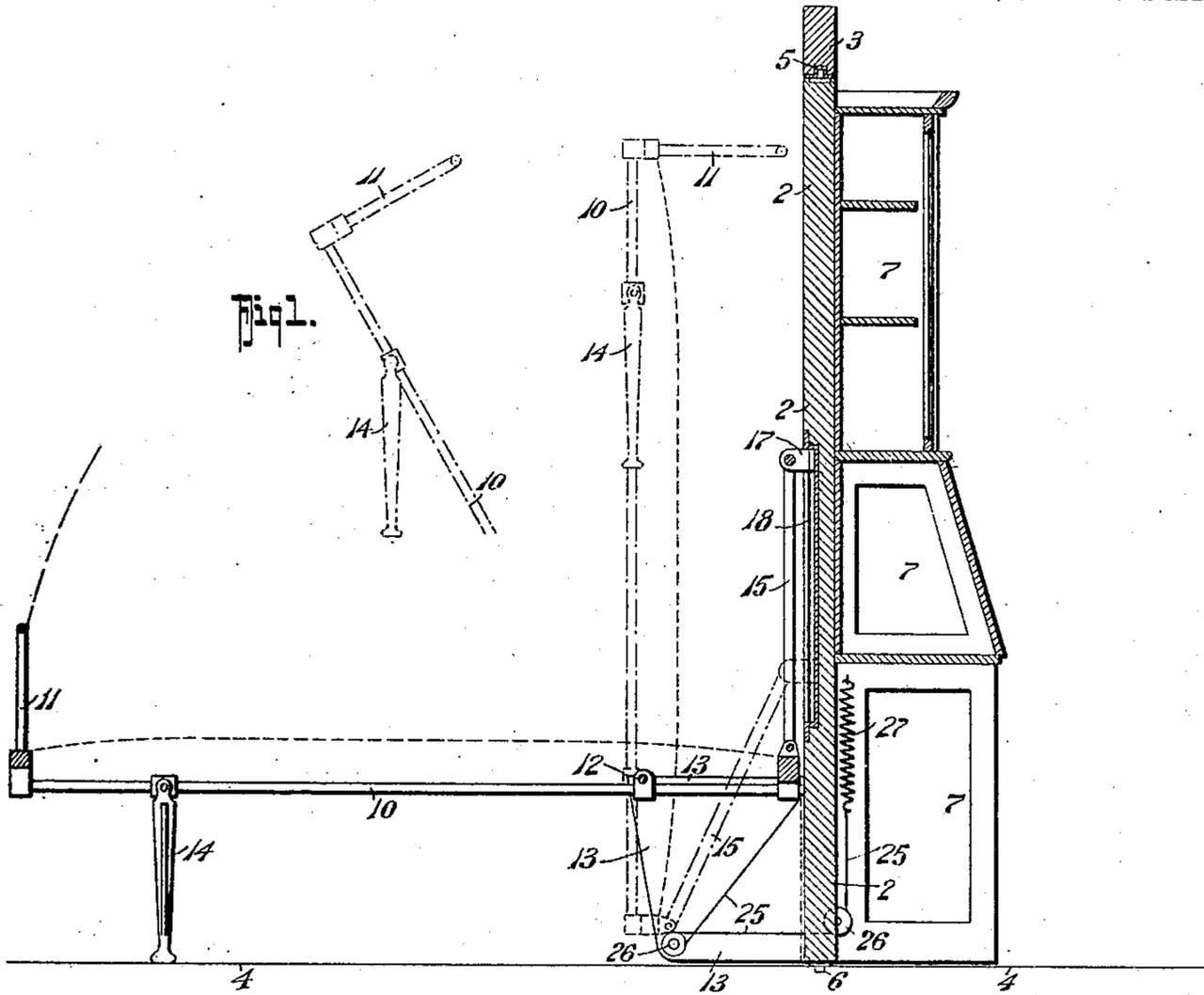


Fig. 1.

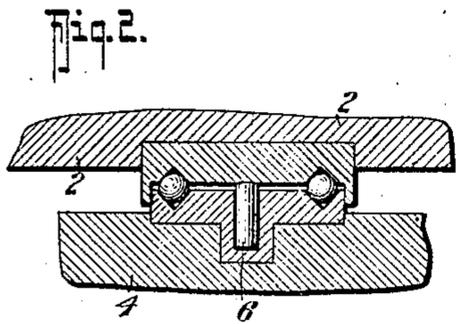


Fig. 2.

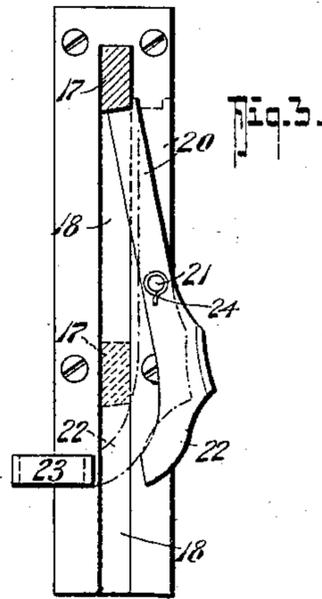


Fig. 3.

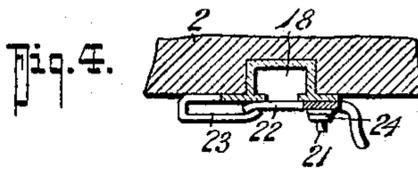


Fig. 4.

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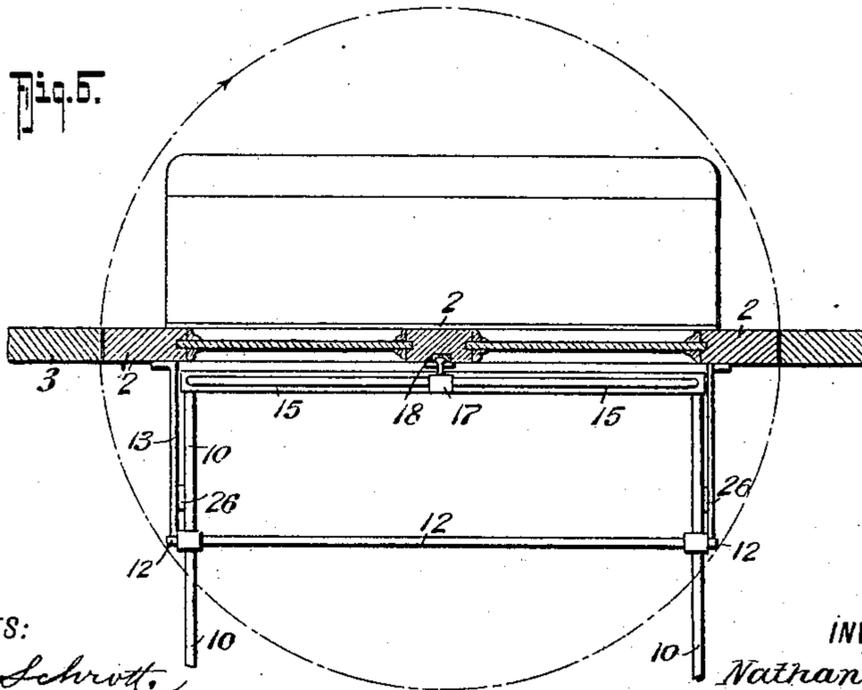
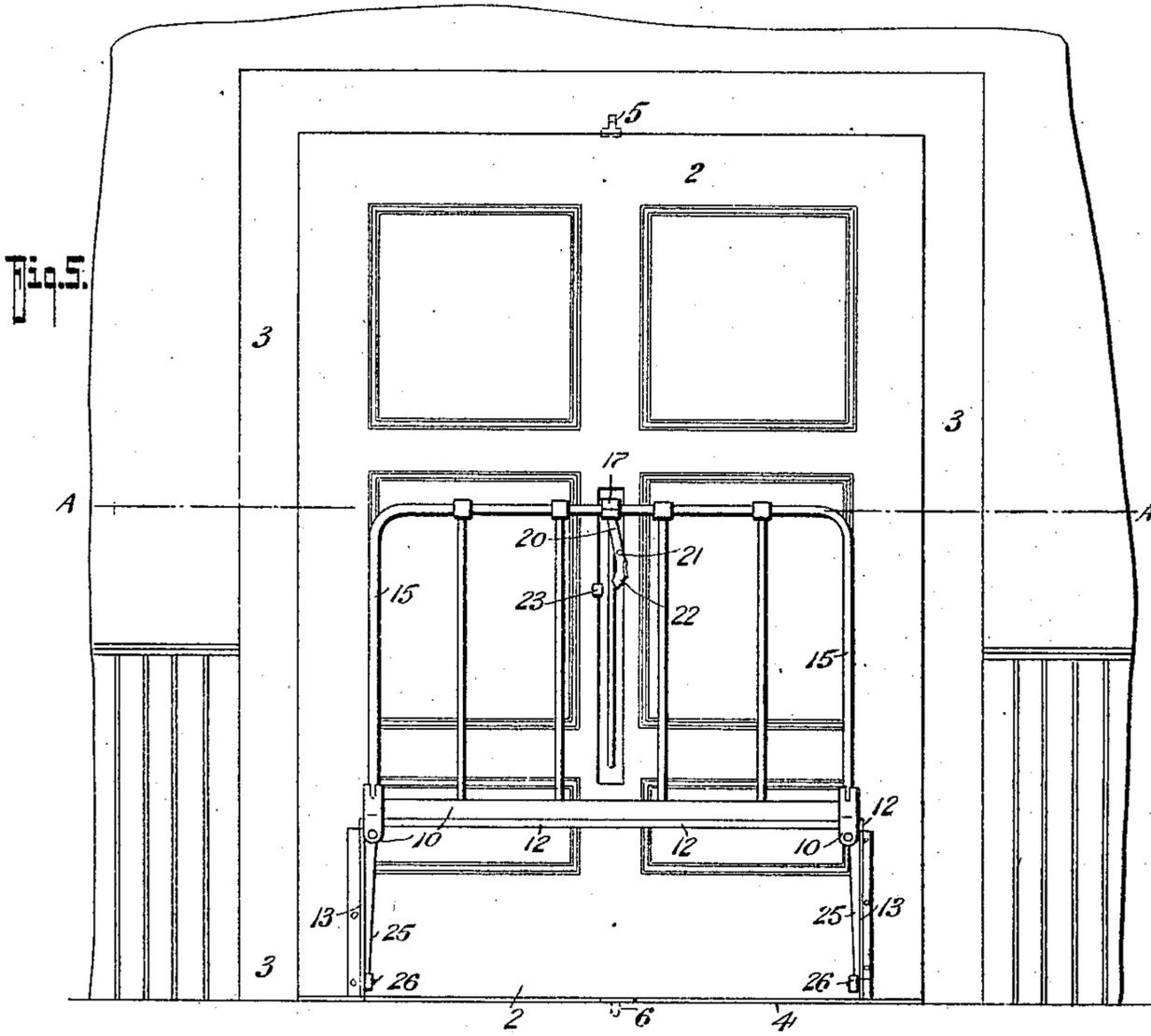
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FOLDING BED.

APPLICATION FILED OCT. 3, 1906.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

NATHAN C. MERRILL, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

## FOLDING BED.

No. 886,622.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed October 3, 1906. Serial No. 337,197.

*To all whom it may concern:*

Be it known that I, NATHAN C. MERRILL, a citizen of the United States of America, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Folding Bed, of which the following is a specification.

This invention relates to an improved folding bed mounted on a wall panel, which panel is rotatable about its mid-width on a vertical axis and occupies a recess in a room.

On its reverse side the panel may carry a book-case, escritoire or other article of parlor furniture.

The device is particularly designed for use in the rooms of apartment houses where a maximum of accommodation is required in a minimum of space; as the parlor furniture may be exposed during the day, and the panel may be rotated to expose the bed when required.

The bed is pivotally supported on brackets secured to the rotating panel, and the head frame of the bed is hinged to the bed underframe and to a vertically slidable guide on the panel, that the bed may be folded vertically against the panel when not required. There are also supplementary features in the matter of springs to facilitate the folding of the bed, and also means for automatically securing the bed in the "in use" position, to all of which attention is drawn in the following specification which fully describes my invention and the manner of its operation, reference being made to the drawings by which it is accompanied in which:

Figure 1 is a vertical section through the middle of the panel, showing in full lines the bed in the "in use" position and indicating by dot and dash lines its position when folded up against the panel, and when partially up, Fig. 2, a sectional detail to an enlarged scale of the pivot footstep of the panel, Figs. 3 and 4, details in elevation and plan of the spring actuated latch by which the bed is secured in the "in use" position, Fig. 5, a front elevation of the panel showing the bed in the "in use" position, and Fig. 6, a sectional plan of the same on the line A A in Fig. 5.

In these drawings 4 represents the level of the floor and 3 the frame of a recess in the wall of a room. A strongly framed panel 2 fits the opening of the recess, the width of such panel is such as will permit a bed of the desired width swinging in the opening of the recess when such bed is folded up against the

panel, and the height of the panel sufficient to allow the bed so folded to pass through the aperture. The bed thus determines the dimensions of the panel and the opening to the recess which it is designed to fill, the dimension of the article of furniture which is secured to the other face of the panel being, under ordinary circumstances of secondary importance.

The panel 2 is mounted about its mid-width on pivots 5 and 6, respectively in the top frame 3 of the recess and the floor vertically beneath, so that the panel 2 may be rotated to expose either face as desired to the room. These pivots 5 and 6 may be provided with ball bearings, and as the floor pivot 6 is required to sustain a considerable weight it will be provided with a suitable footstep bearing to maintain the lower edge of the panel 2 clear of the floor 4. This footstep will preferably be made somewhat as illustrated in Fig. 2, with a series of small balls between V shaped annular grooves suitably protected from dust.

The panel 2 may be secured in the position to close the recess, either by a door latch of ordinary construction or by a hidden latch operated say by the foot. To one face of this panel 2 may be securely fastened, so as to be clear of the floor, a cupboard or escritoire and book-case, as represented by 7 in the drawings, or any article of room furniture which the circumstances of the case may require, the outer corners of whatever article is used being kept within the radius of swing of the panel so as to clear the frame 3 of the recess. To the opposite face of the panel 2 is secured the folding bed. This consists of a rectangular bed frame 10 of the desired length and width to carry the mattress, to the outer end of which bed frame is secured the foot frame 11.

The bed frame 10 is furnished toward the head end with a cross shaft 12 the ends of which rest in bearings in stout brackets 13 secured to, and outwardly projecting from, the panel 2 outside the width of the bed frame 10, the bearings of the shaft in the brackets 13 being at the desired height of the bed from the floor.

The head frame 15 is hinged to the end member of the rectangular frame 10, and the middle of the upper rail of it is hinged to a slide block 17 vertically slidable in a recessed guide 18. By this method of mounting and pivotally connecting the bed frame and its

head frame to the panel the bed frame may be folded up against the face of the panel 2 as shown in dot and dash lines in Fig. 1 or may be lowered to the horizontal position, as shown in full lines, in which latter position the outer end of it is supported on freely swinging legs 14 connected to the bed frame 10 a short distance from the foot end.

It will be noticed that, as the weight to be borne by the bed is carried by the bearings of the shaft 12 and by the swinging legs 14 which are both situated a distance within from the head and foot respectively of the bed frame 10, that frame may be structurally much lighter than is necessary in bedsteads of ordinary construction where the supports are at the extreme ends of the bed frame.

Toward the upper end of the guide 18, to engage the under side of the slide block 17 when such slide is at the limit of its upward movement, is a latch 20 pivoted on a pin 21 and having a spring 24, which spring actuated latch will automatically secure the bed in the down or "in use" position. This latch 20, see Figs. 3 and 4, is produced beyond its pivot pin 21 to form a tail portion 22 which is curved across the width of the guide 18 so as to project in the path of the slide block 17, and its end is outwardly turned slightly to engage and be retained by a spring latch 23 on the opposite side of the path of the slide block 17 in its guide. The object of this is that when the upper end of the latch 20 is withdrawn from engagement with the under-side slide block 17, it will be retained in such position of disengagement by the spring latch 23 while the person proceeds to the foot of the bed to lift it up, and the projection of the tail end 22 across the path of the guide is designed to provide that the downward movement of the slide block 17 when the bed is being lifted, will free the latch tail 22 from engagement with 23 so as to leave the latch 20 in its normal position to latch and automatically secure the bed in the "in use" position.

The head of the bed frame 10 is made extra heavy to counter-balance the foot end of it, which end extends further from the fulcrum shaft 12 on which it moves, and to supplement this weight counter-balance and to furnish an excess of pressure tending to lift the foot end of the bed from the floor, a cord or chain 25 is attached on each side to the head of the bed frame and passed round pulleys 26 situated at the lower front of each side bracket 13, and in the foot of the panel 2, and these cords are connected to springs 27 at the back of the panel. The springs will thus exert their greatest effort when the bed is extended and in the "in use" position, as shown in full lines in Fig. 1. The springs will exert their least effort when the bed is in its vertical or up-ended position, i. e., in the position shown complete in dot and dash lines in Fig. 1, and at that point the springs

will again exert tension which opposes the further effort to move the bed against the panel 2.

The convenience in the room of an apartment house of being able to so conveniently remove the bed from exposure to the living room while simultaneously substituting for it some suitable article of parlor furniture; and the convenient manner in which the bed is folded up against the panel to occupy a minimum space in the recess which space may thus be utilized as a clothes closet, are advantages which will be readily appreciated by the designers of such apartment houses.

Although specifically designed for application as described to a recess in a room of an apartment house the same vertically folding bed on a revoluble panel may be applied in a sanitarium, or hotel which caters to the prevailing fashion of sleeping in the open air. In this case the panel would be in the outer wall of the house and would close an aperture opening on to a veranda, and there would be no necessity for applying any article of furniture to the reverse side of the panel. The bed in such a case could be used either inside or outside of a room as the inclination of the occupant or the condition of the weather might determine. In such application stop moldings could be applied to the reverse edges of the opposite sides of either the panel or the aperture frame to render the joint draft proof.

Having now particularly described my invention and the manner of its application, I hereby declare that what I claim as new and desire to be protected in by Letters Patent is:

1. A bedstead frame pivotally supported on brackets outwardly projecting from a revoluble panel or wall section of a room, legs pivotally connected to the outer end of said bedstead frame, a head frame hinged to the end of the bedstead frame toward the panel to which it is connected, a slide block pivotally mounted on the upper rail of the head frame, a guide in which the block is vertically slidable, a spring actuated latch designed to secure the slide at the upward limit of its movement, means for securing said latch in its release position, and means whereby such securing means is automatically released by the downward movement of the slide in its guide.

2. In a room of an apartment house or the like, the revoluble panel 12 pivotally mounted on a vertical axis, brackets 13 projecting from one face of the panel, the bedstead frame 10 having swinging legs 14 and a cross shaft 12 which shaft is designed to rest in bearings in the brackets 13, the head frame 15 hinged to the end of the bedstead 10 and having pivotally mounted on its upper rail the slide block 17, the guide 18 in which said slide block is vertically slidable, the latch 20

mounted on the pin 21 and having a spring 24 tending to hold the latch in engagement with the under side of the slide block 17 when such slide block is at the upward limit of its movement, said latch 20 having a tail end 22 curved toward the guide path 18, the spring retaining latch 23 on the opposite side of the slide block guide 18 designed to hold the tail end 22 of the latch 20, springs 27 connected by cords 25 over pulleys 26 mounted on the brackets 13 vertically beneath the shaft

12 to the head end of the bedstead frame, and an article of parlor furniture 7 secured to the opposite face of the panel 2 to the bedstead.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NATHAN C. MERRILL

Witnesses:

ROWLAND BRITAIN,  
CLIVE S. CARMAN.