J. C. & H. W. BEACH.

DISAPPEARING BED.

APPLICATION FILED SEPT. 8, 1914. RENEWED MAY 9, 1917.

1,249,269.

Patented Dec. 4, 1917.

2 SHEETS—SHEET 1.

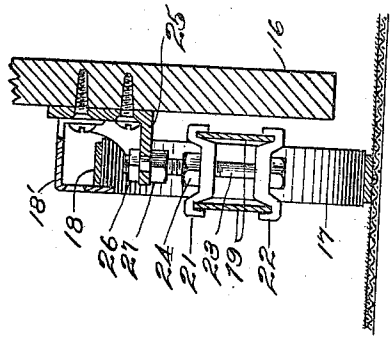


Fig. 3.

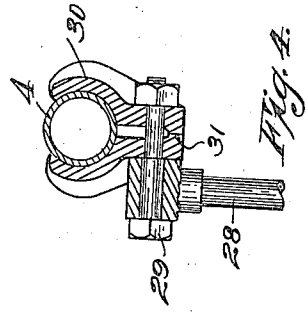


Fig. 4.

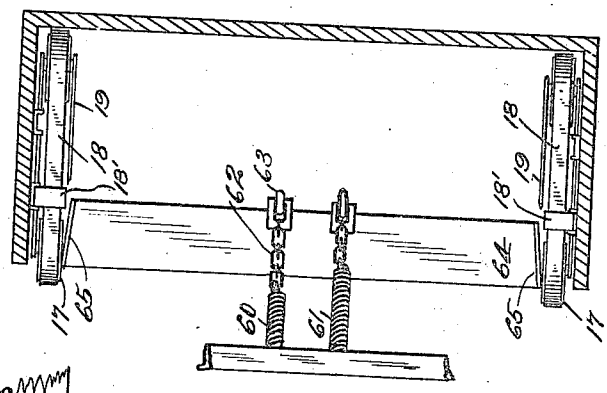


Fig. 2.

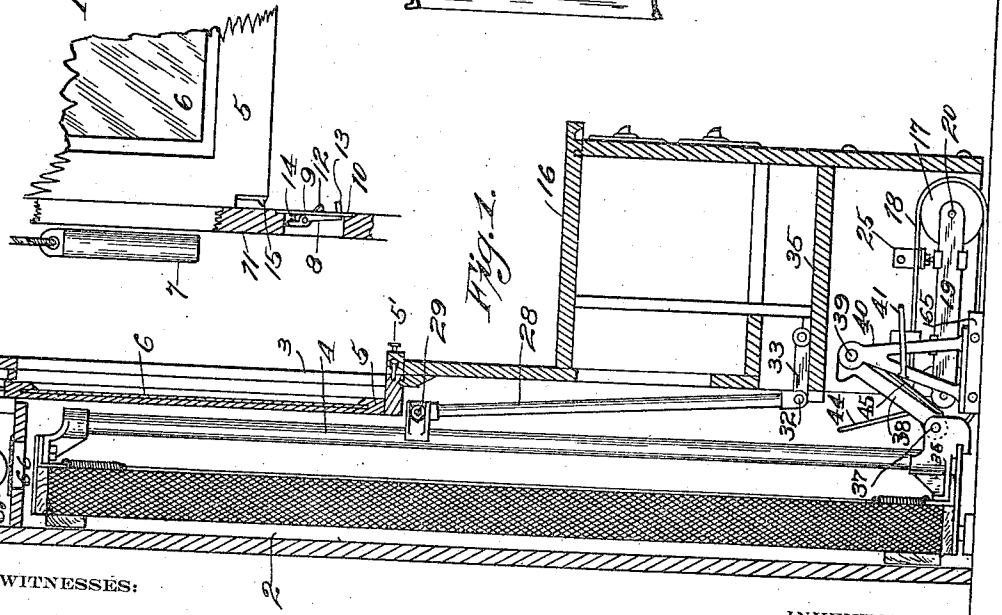


Fig. 1.

Fig. 5.

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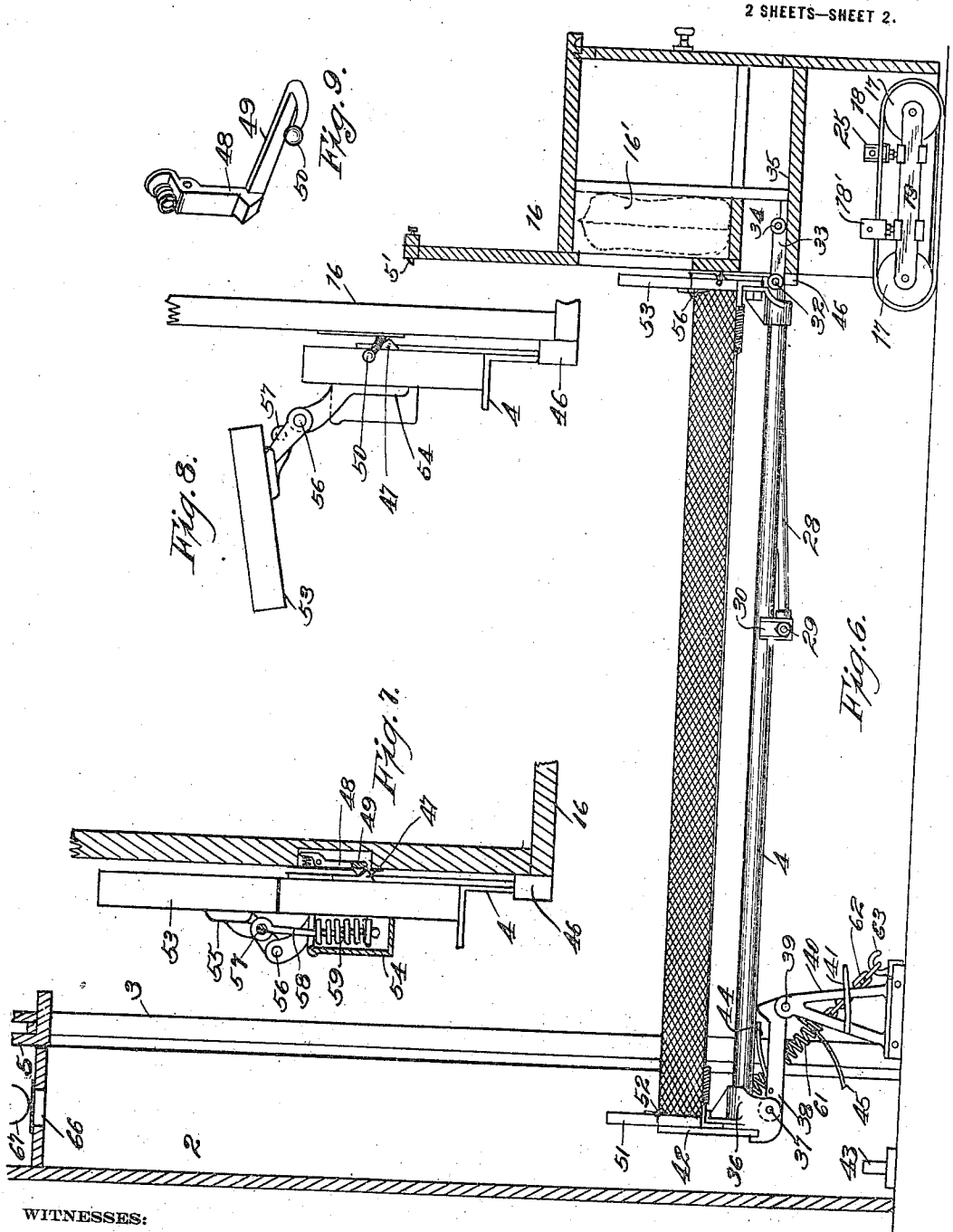
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# UNITED STATES PATENT OFFICE.

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## DISAPPEARING BED.

1,249,269. Specification of Letters Patent. Patented Dec. 4, 1917.

Application filed September 8, 1914, Serial No. 860,582. Renewed May 9, 1917. Serial No. 167,579.

*To all whom it may concern:*

Be it known that we, JOHN C. BEACH and HENRY W. BEACH, both citizens of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Disappearing Beds, of which the following is a specification.

This invention relates to improvements in disappearing beds and particularly to improvements in details of construction of the types of beds shown in our prior applications filed respectively December 22, 1913, Serial No. 800,133, and June 2, 1914, Serial Number 842,444.

The object of this invention is to provide improved details of construction for disappearing beds which are simple, practicable, efficient, ornate and inexpensive, thus tending to generally enhance the appearance of the structure and lessen the cost of erection and selling price, and provide for ease of operation, and for such various adjustments as may be required.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a vertical transverse section through the structure, showing the bed frame and its connected members in side elevation.

Fig. 2 is a horizontal section through the carrier and showing the fixed guide in plan.

Fig. 3 is a cross-section of a carriage truck and mounting in detail.

Fig. 4 is a detail of the link hanger.

Fig. 5 is a detail of the sliding panel and its latch.

Fig. 6 is a side elevation of the bed frame in horizontal position, showing the recess and the carrier in section.

Figs. 7 and 8 are detail views of the folding footboard.

Fig. 9 is a perspective of the bed latch.

At 2 is shown a recess which may represent a stationary part of a cabinet or a closet in a wall, pilasters 3 of which surround an opening in front of the recess to permit the outward and inward movement of a bed frame 4 of suitable construction.

The upper portion of the opening of the recess is closable by a vertical, sliding and disappearing panel 5 which may be provided with a mirror 6, the panel being counterbalanced by suitable means, as weights 7, one at each end. For latching the panel down we have designed a peculiar latch 8 pivoted at 9 upon a plate 10 attached to the adjacent panel guide 11. The face of the latch is provided with an intermediate shoulder 12 and at the end with a push button 13. The latch is swung outward by a spring 14 to engage a dog 15 which is secured upon the adjacent edge of the frame 5. The button 13 projects just below the bottom edge of the frame when this is down and when pressed in depresses the shoulder 12 and the counter-weights lift the frame 5.

The lower point of the recess front is covered by a horizontally movable cabinet structure 16, preferably designed as a useful article of furniture, here also utilized as a carrier supported on rollers 17 arranged tandem in pairs at the opposite sides of the cabinet. Upon each pair of rollers is mounted a respective endless belt 18 operating as self-laying tracks leaving no path upon a carpet surface over which they may run.

For the purpose of readily adjusting the pairs of rollers to suit the angle of the floor over which they operate, they are journaled in respective trucks, each consisting of parallel flat-iron bars 19 spaced and secured by shouldered rivets forming axles 20 of the rollers. On the truck bars 19 and intermediate the wheels are upper and lower clips 21—22, duplicate and interchangeable, pierced by a single bolt 23 with a nut 24 on its upwardly extending shank, between which and the head of the bolt the clips are bound upon the edges of the bars 19. The upper end of each bolt passes through a respective angle bracket 25 secured upon the inside of the side wall of the carrier 16 and upon opposite sides of the bracket, where the bolt passes, are lock nuts 26—27. To adjust the angle of the truck as to the carrier, the lock-nuts 26—27 are raised or lowered along the bolt thus varying the position of the truck as to the carrier. Either end of the truck may be adjusted independently of the others.

The carrier 16 is connected to the bed frame 4 for the purpose of supporting and moving the same by a set of knuckle jointed links each comprising a long link section 28, one end of which is pivoted upon a bolt

29 which also secures a pair of duplicate, interchangeable clamp jaws 30 upon a rail of the bed frame. Each jaw 30 is concaved at one end to embrace the rail and on the same side at its opposite end is provided with a spur 31. The jaws are intermediately perforated to receive the bolt 29 and when assembled spur to spur, and encompassing the rail, by tightening up the bolt the jaws are locked to the rail.

The other end of the link 28 is jointed at 32 to the short link 33, which, in turn is pivoted at 34 to a convenient portion 35 of the carrier 16.

That end of the bed frame adjacent the recess is provided with corner journal blocks 36 pivoted at 37 to substantial links 38 extending below and parallel to the rails, and pivotally connected at 39 to respective brackets or journal stands 40, arranged slightly forward of the recess and being concealed by the carrier 16 when this is closed up to the recess front. The stands each have a lateral flange 41 arranged to just clear the truck belts 18 and serve to prevent the upward tilting of the carrier in the event that one should attempt to pull the latter out before the mirror frame 5 is entirely out of the way of the bed.

When the bed is vertical (Fig. 1) its lower end, which is provided with a counterweight 42, shown as sheet-iron, is supported upon a yieldable bumper 43 and the links 38 stand at an angle to frame 4.

Interposed in this angle between the bed and each link is a leaf spring 44, and as the bed tilts outwardly with the outward movement of the carrier, after the mirror has been raised, these springs come into action to yieldably resist the swinging of the bed about the pivots 37. The links 38 are themselves cushioned upon compressed springs 45 interposed therebetween and the adjacent legs of the stands 40. After the frame 4 moves out of an angle of 45°, more or less, it and the links 38 swing together about the pivots 39 until horizontal, at which position the outer end of the bed rests upon a stop 46 on the back of the carrier (Fig. 6).

At the foot (outer) end of the bed is provided a lug 47 engageable by a spring latch 48 (Fig. 9) pivoted upon a part of the carrier and having a lateral arm 49 with a button 50 disposed to be conveniently pressed by the operator when desiring to unlatch the bed for upward movement.

That the bed may be concealed in a very shallow recess it is provided with a head board 51 foldably connected by spring hinges 52 to the rigid head board of the frame 4. The springs automatically position the head board vertically as the bed moves to horizontal position. At the foot of the bed is a foot-board 53 connected to the foot member by peculiar hinges operative to hold the board 53 in either of two positions, *i. e.* perpendicular or down against the bedding.

These hinges each comprise a pocket plate 54 secured to a stationary part of the bed frame, and a leaf 55 pivoted at 56 and secured to the foldable foot board 53. The hinge leaf 55 has a hook bar 57 eccentric to the hinge pivot 56 and upon which is mounted a link 58 which compresses a spring 59 in the pocket of plate 54. When the foot-board is standing perpendicular (Fig. 7) the link 58 is drawn to one side of pivot 56 and as the foot-board is thrown down (Fig. 8) the link crosses the pivot center and serves to force the board down upon the bedding.

By connecting the springs 44 to the links 38, and the springs 45 to the stands 40 practicable and economical mechanical construction is obtained. To aid and control the tilting of the bed to its head end are connected two coil springs 60—61 of different strength and to these are connected chains 62, attachable to hooks 63 in a convenient fixed part as a base board 64 upon which the stands 40 are mounted. The chains afford a very simple yet substantial means for quickly increasing or decreasing the tension of the check springs 60—61. Preferably the chain of the stronger spring is set slack so that it will not come into action until the bed frame reaches nearly horizontal, when its leverage about the fulcra 39 is greatest.

The perfect alinement of the carrier as it moves toward the recess is obtained by placing fixed guide rails 65 at angles to the path of movement of the rollers 17; the divergent ends of the guides being so positioned that when engaged by the rollers these will be so directed as to correctly guide the carrier to proper register with the pilasters.

Preferably the carrier 16 is constructed with a compartment 16′ for pillows, this compartment being covered by the folding foot-board when perpendicular.

Ample and effectual ventilation is obtained when the bed is concealed by providing in the top of the recess a vent hole 66 from which the air is led away by a vent pipe 67. Indraft is permitted around the lower edge of the cabinet 16. The mirror frame 5 is latched to the carrier by a suitable latch 5′ at the top of the cabinet 16.

To keep the belt 18 from running off of the roller 17 a hook or guard 18′ is secured to one of the brackets 25 of each truck.

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

1. In a tiltable bed structure, a tiltable bed frame, a link, and means for pivotally connecting the link to one of the bed rails, comprising a pair of duplicate, interchangeable clamp jaws with opposite seats to embrace the bed rail and bearing upon

each other at their contiguous ends, and a bolt passing through for securing the same upon the rail, said link being mounted on the bolt.

2. The combination in a disappearing bed structure, of a tiltable bed frame, a carrier operatively connected to the frame for tilting the same, pairs of rollers with self-laying tracks, trucks for the rollers, and means for connecting the trucks at their ends to the sides of the carrier, and for angularly adjusting the same with relation to the carrier.

3. The combination in a disappearing bed structure, of a tiltable bed frame, a carrier operatively connected to the frame for tilting the same, pairs of rollers with self-laying tracks, trucks for the rollers, and means for connecting the trucks at their ends to the sides of the carrier, and for angularly adjusting the same with relation to the carrier, said means including brackets attached to the carrier, clips embracing the truck, and bolts clamping the clips and passing through the brackets and having lock nuts acting oppositely upon the brackets.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN C. BEACH.
HENRY W. BEACH.

Witnesses:
S. M. DOHERTY,
E. L. KERHAM.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**