Feb. 7, 1956 H. B. DAVIS 2,733,451

DOUBLE BUNK BED

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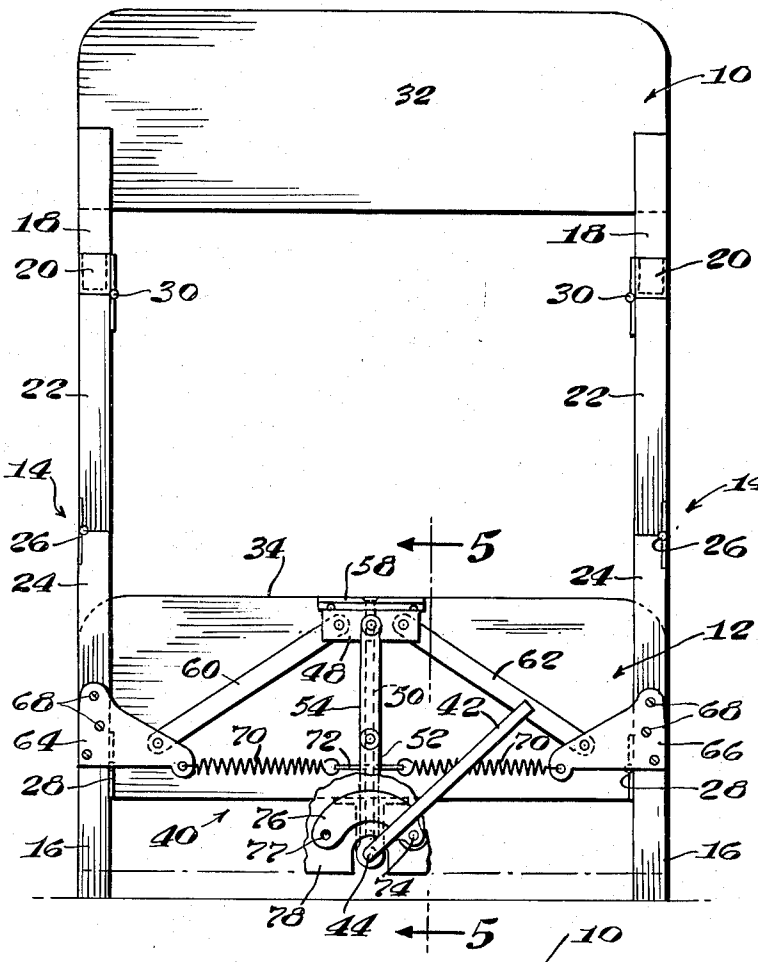


Fig. 1

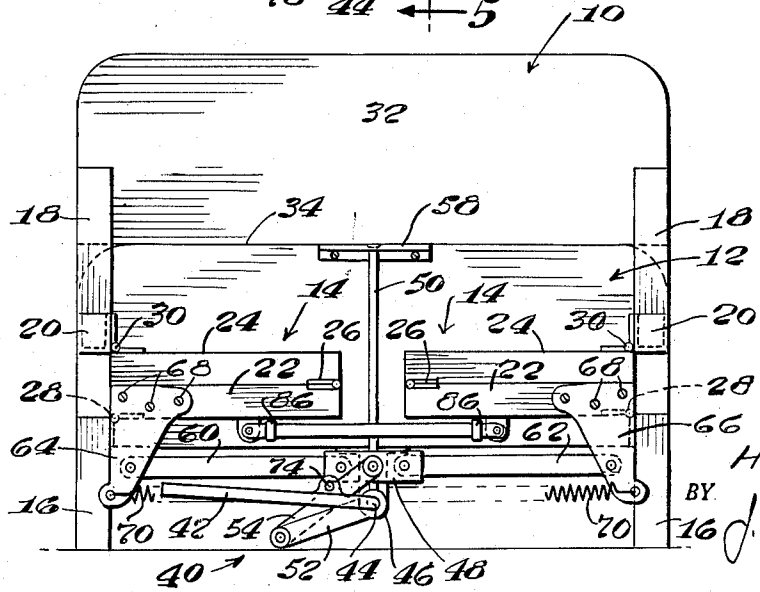


Fig. 2

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Fig. 3

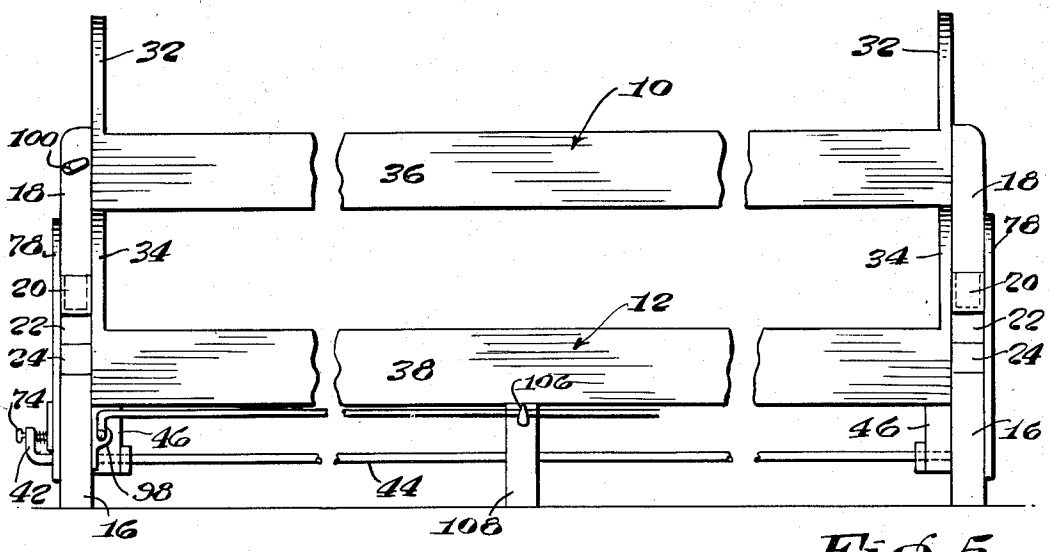


Fig. 5

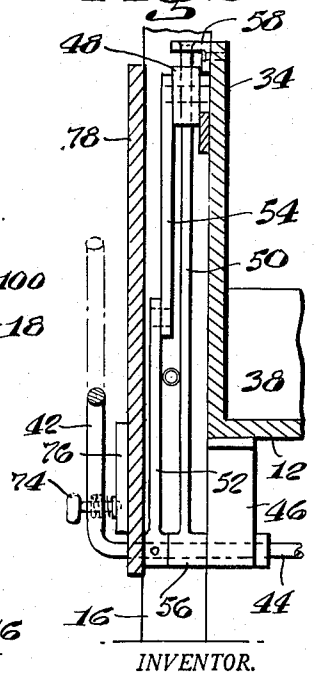
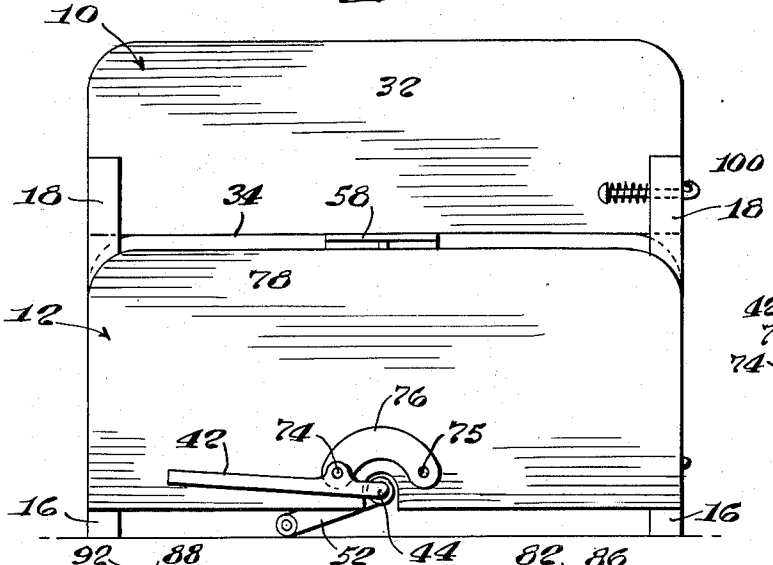


Fig. 4



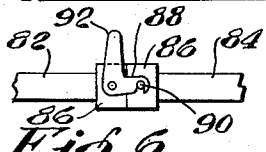


Fig. 6

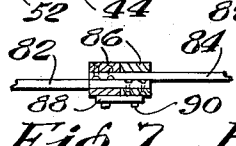


Fig. 7

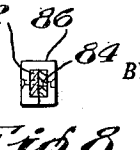


Fig. 8

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DOUBLE BUNK BED

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2 Claims. (Cl. 5—8)

This invention relates to a double bunk bed.

The invention has for an object to provide a novel and improved bunk bed of the type having an upper and a lower bunk and in which provision is made for lowering the upper bunk relative to the lower bunk whereby to render the upper bunk more readily accessible for making up the bed.

With this general object in view and such others as may hereinafter appear, the invention consists in the double bunk bed and in the various structures, arrangements, and combinations of parts hereinafter described and particularly defined in the claims at the end of this specification.

One of the disadvantages in the use of a double bunk bed of the conventional type having one bunk arranged above the other in a fixed spaced relation comprises the hazard involved in standing on a ladder when making up the bed in the upper bunk. The present invention contemplates a novel double bunk structure adapted to permit the upper bunk to be lowered to a convenient level above the lower bunk whereby the attendant may stand on the floor while changing the bed clothes and making up the bed. In the illustrated embodiment of the invention novel connections are provided between the upper and lower bunks including operating mechanism whereby to enable the attendant to effect lowering and raising of the upper bunk relative to the lower bunk in a novel, simple, and convenient manner.

In the drawings illustrating the preferred embodiment of the invention, Fig. 1 is an end view of the present double bunk bed showing the upper bunk in its elevated position and with a cover panel removed to show the operating mechanism; Fig. 2 is a similar view showing the upper bunk in its lowered position; Figs. 3 and 4 are side and end elevations respectively of the present double bunk bed with the upper bunk in its lowered position; Fig. 5 is a cross-sectional view taken on the line 5—5 of Fig. 1 showing a portion of the operating mechanism; and Figs. 6, 7, and 8 are side elevation, plan, and end views respectively of a latch mechanism for preventing inadvertent lowering of the upper bunk.

Referring now to the drawings, **10** and **12** represent the upper and lower bunks respectively of the present double bunk bed, herein shown as being operatively connected together by a hinged structure, indicated generally at **14**, arranged to support the upper bunk **10** in an elevated position, as shown in Fig. 1 and adapted to permit lowering of the upper bunk to a position immediately above the lower bunk, as shown in Fig. 2.

The bunks **10**, **12** may be of rectangular box-like construction, the lower bunk **12** having legs or corner posts **16** resting on the floor, and the upper bunk having similar legs or corner posts **18** detachably supported in sockets **20** secured to the upper ends of the hinged structure. As herein illustrated, the hinged structure **14** may comprise upper and lower legs **22**, **24** connected together at their adjacent ends by hinges **26**, the lower legs **24** being connected to the lower bunk corner posts **16** by hinges **28**, and the upper legs **22** being connected to the upper bunk

corner posts **18** by hinges **30**, the hinges being arranged in a manner such as to permit extension of the hinged legs into vertical alignment with the corner posts **16**, **18** when the upper bunk is in its elevated position, and to permit rocking of the legs **22**, **24** inwardly into a horizontal position when the upper bunk is caused to descend to its lowered position. As herein shown, the bunk beds **10**, **12** may be provided with end boards **32**, **34** respectively arranged to extend a substantial distance above the sides **36**, **38** of the bunks, and in practice, the upper bunk **10** is preferably arranged to come to rest on top of the end boards **34** of the lower bunk and to be supported thereby when the unit is in its lowered position, as clearly illustrated in Figs. 2 and 3.

Provision is made in the illustrated embodiment of the invention for raising and lowering the upper bunk **10** by operating linkage, indicated generally at **40**, mounted on the lower bunk **12** and operatively connected to the hinged structure **14**, and as herein shown, the operating linkage **40** may include an operating handle **42** connected to or formed integrally with a horizontally extended central shaft **44** journaled in suitable bearing brackets **46** attached to the underside of the lower bunk **12**. The horizontally extended shaft **44** may be operatively connected to similar linkage **40** at both ends of the bunk **12** so that a description of the linkage at one end may suffice for both. As herein illustrated, the shaft **44** may be connected by toggle linkage to a vertically reciprocal slide bracket **48** mounted to slide on a central stationary rod **50**, one arm **52** of the toggle linkage being fast on the shaft **44** and the other arm **54** being pivotally connected to the slide bracket. The vertical rod **50** may be supported at its lower end in an extended portion **56** of the bearing bracket **46** and may be supported at its other end in an angle bracket **58** attached to the upper end of the board **34** of the lower bunk, as best shown in Fig. 5. The slide bracket **48** may be further connected by links **60**, **62** to right angle brackets **64**, **66** respectively, secured to and extended at right angles from the lower leg members **24** of the hinged structure by screws **68**.

From the description thus far it will be observed that when the upper bunk **10** is in its elevated position, as shown in Fig. 1, the toggle links **52**, **54** are in substantially vertical alignment on dead center, and that in operation, when the operating handle **42** is manually rocked to the left viewing Fig. 1, the slide bracket **48** will be caused to descend, and the links **60**, **62** connected to the slide bracket will cause the right angle brackets **64**, **66** together with the opposed lower hinged legs **24** attached thereto to be rocked or pivoted on the hinges **28**, the hinged structure also pivoting on the connecting hinges **26**, **30** to effect retraction of the hinged structure and lowering of the upper bunk **10** to the position shown in Fig. 2, in which position the links **60**, **62** connecting the brackets **64**, **66** to the slide bracket **48** are in substantially horizontal alignment on or slightly beyond dead center. Conversely, when the operating handle **42** is rocked in a clockwise direction from the position shown in Fig. 2, the operation will be reversed to effect elevation of the upper bunk through the linkage **40** described. As illustrated in Figs. 1 and 2, the ends of the right angle brackets **64**, **66** may and preferably will be connected together by two springs **70** having an intermediate link **72** to form in effect one elongated spring which is arranged to urge the linkage in a direction such as to retain the toggle arms **52**, **54** in their dead center or vertically aligned position when the unit is in its elevated position as shown in Fig. 1, and likewise to urge the linkage in the opposite direction to maintain the links **60**, **62** in their horizontally aligned position when the unit is in its lowered position as shown in Fig. 2, the spring also

assisting in the initial elevating movement of the linkage when the operating handle is rocked beyond dead center in a clockwise direction viewing Fig. 2.

Several expedients are herein illustrated for detachably retaining the operating linkage **40** and the hinged structure **14** in its elevated position whereby to prevent inadvertent collapse of the structure, and as herein shown, one of such expedients may comprise a spring-pressed stud or bolt **74** carried by the operating handle **42** and arranged to cooperate with an opening **75** formed in a plate member **76** secured to a cover member **78** attached to the end of the lower bunk, as shown in Fig. 5 whereby to maintain the operating handle in its elevating position. The spring-pressed stud **74** may be manually withdrawn from the opening **75** to permit rocking of the handle to its lowering position, and a second opening **77** may be provided in the plate **76** to lock the operating arm in its lowering position.

From the above description it will be observed that the present double bunk bed structure enables an attendant to quickly and easily lower the upper bunk relative to the lower bunk to present the upper bunk at a convenient level to permit the bed to be made up while standing on the floor. If desired, after the upper bunk has been lowered the structure may be used as a single bunk. It will also be observed that the upper bunk may be detachably removed from the structure and set on the floor to provide two bunks side by side if desired.

While the preferred embodiment of the invention has been herein illustrated and described it will be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:

1. In a double bunk bed having an upper and a lower bunk, a double-hinged structure operatively supporting the upper and lower bunks in vertically spaced relation, and operating linkage carried at each end of the lower bunk including an operating handle carried by said lower bunk and toggle links connected to said double-hinged structure for effecting lowering and raising of the upper bunk relative to the lower bunk, and means for detachably retaining said operating handle in its bunk-elevated position and its bunk-lowered position, said last-named means including a spring-pressed pin carried by said operating handle, and openings in the lower bunk arranged to receive said pin in either position of operation.

2. In a double bunk bed having an upper and a lower bunk, a double-hinged structure at the ends of said bunks operatively supporting the upper and lower bunks in vertically spaced relation, and operating linkage carried at each end of the lower bunk including an operating handle carried by said lower bunk and connected to said double-hinged structure for effecting lowering and raising of the upper bunk relative to the lower bunk, and an elongated spring connecting opposed sides of said double-hinged structure and arranged to assist said operating linkage in its bunk-raising or lowering operation.

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