

May 2, 1967

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3,316,563

BUNK BED

Filed Aug. 20, 1962

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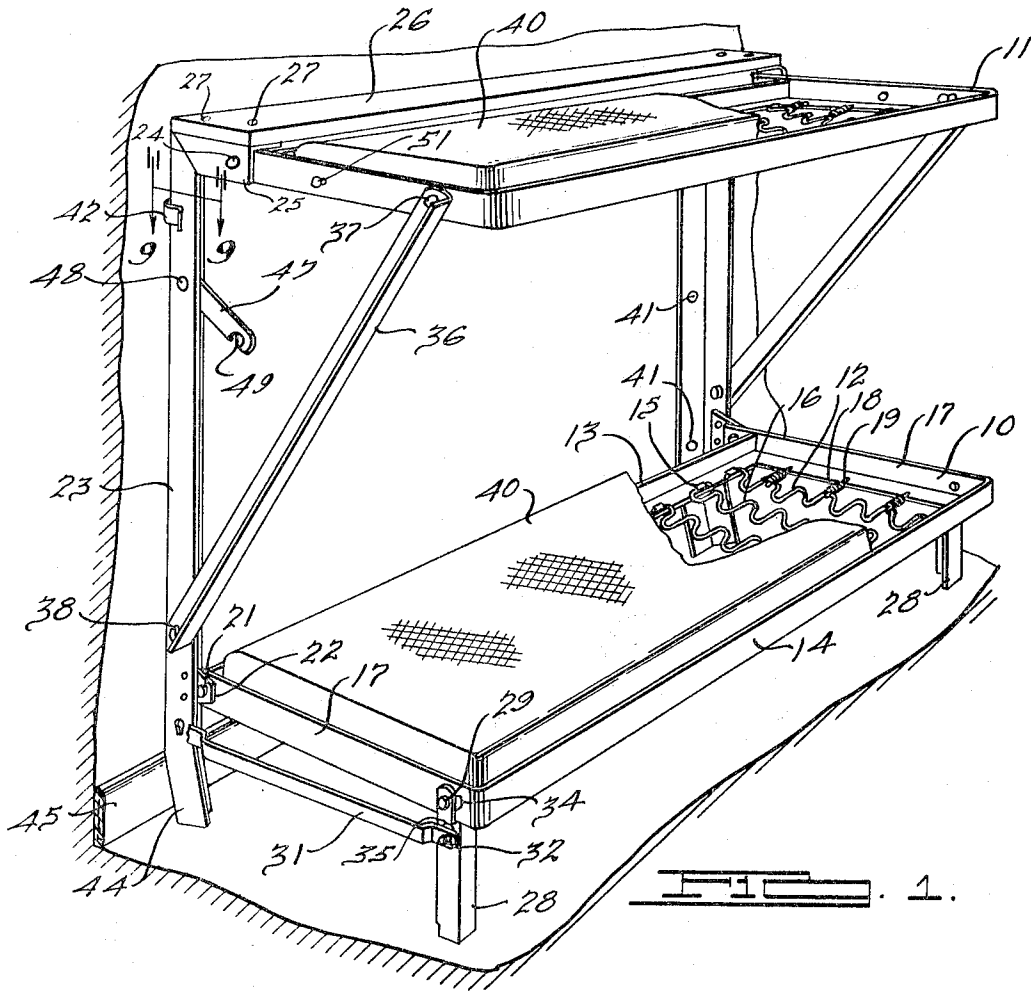


FIG. 1.

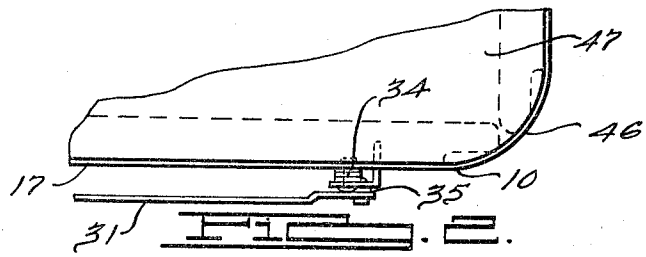


FIG. 2.

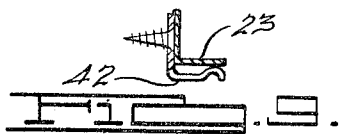


FIG. 3.

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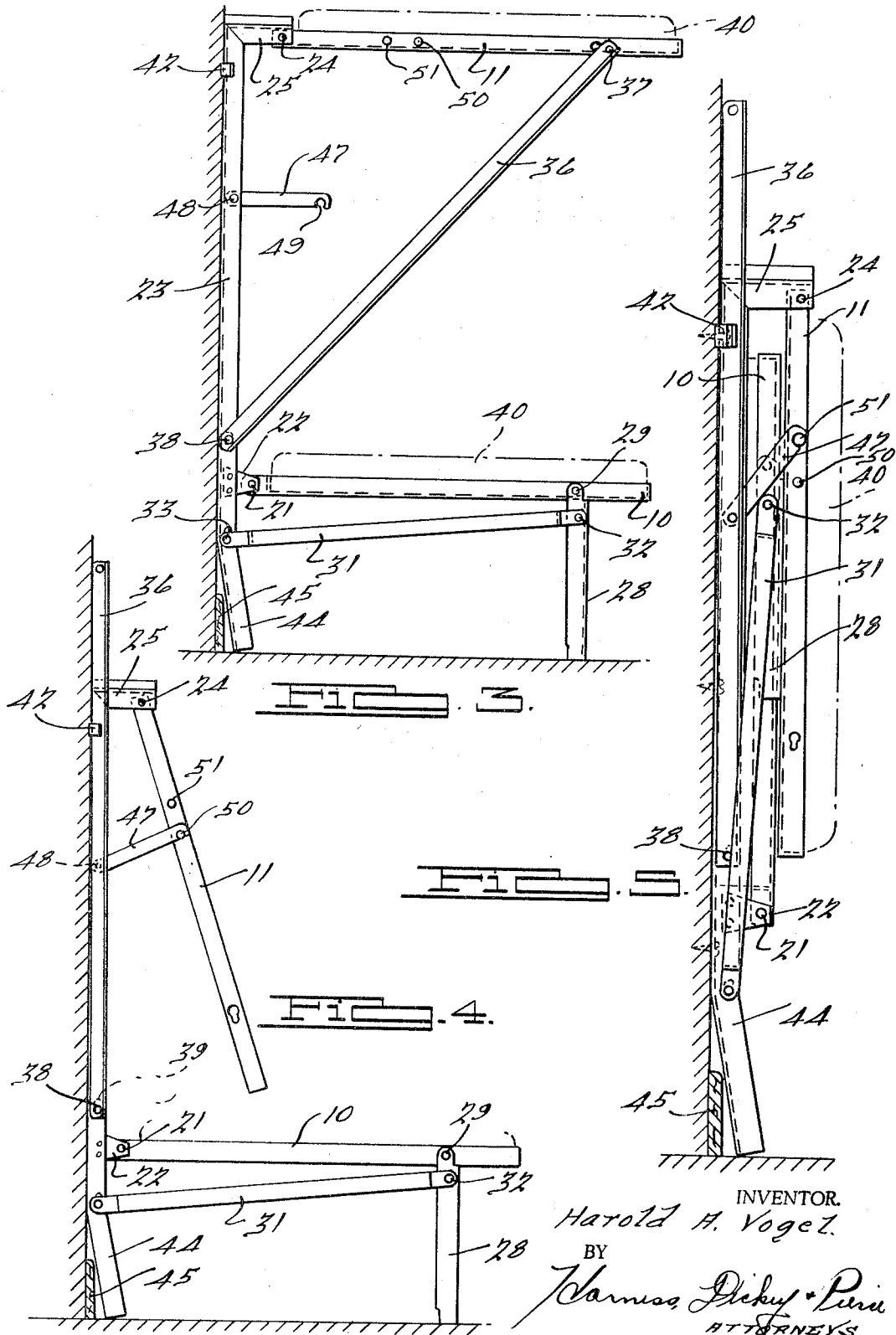
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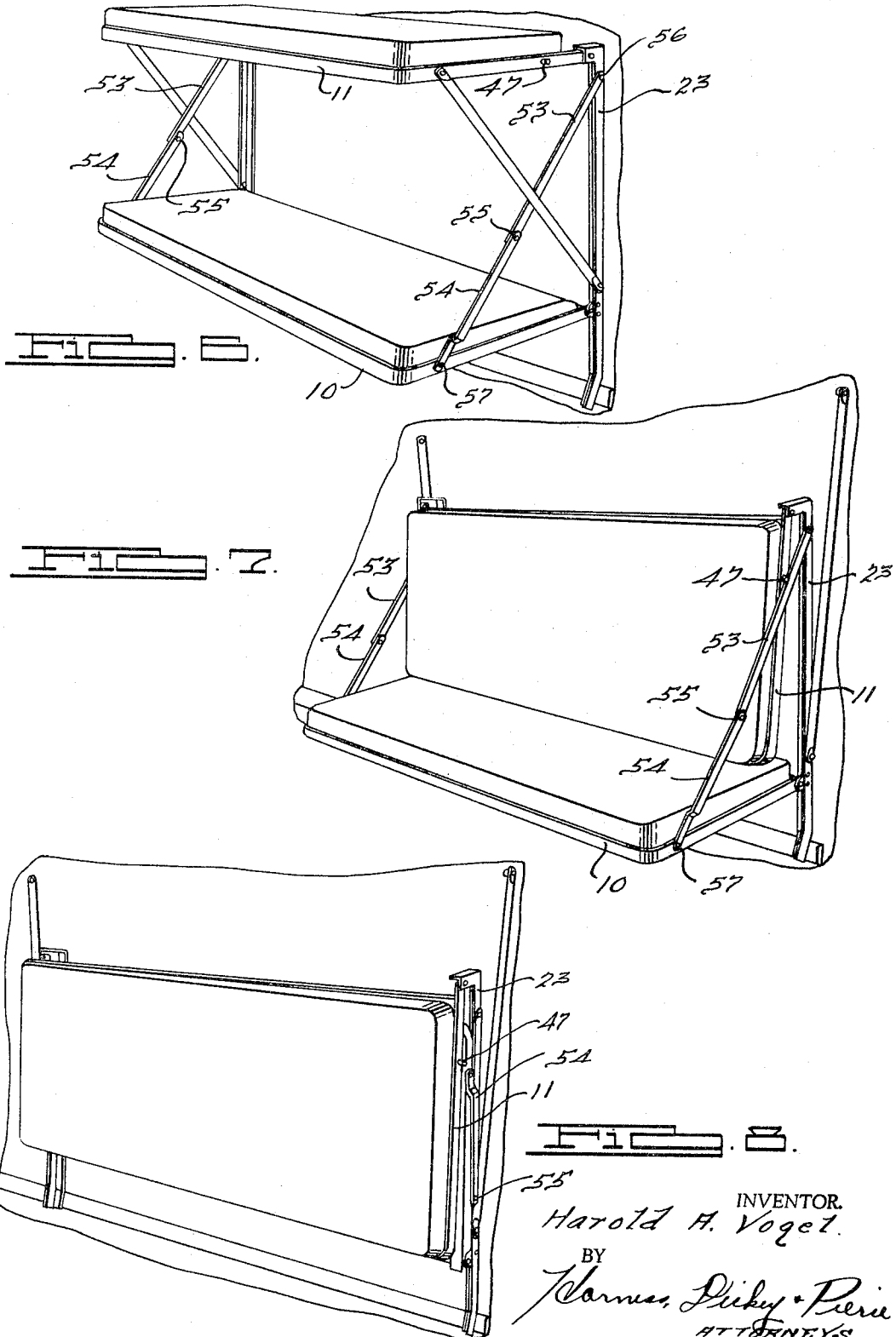
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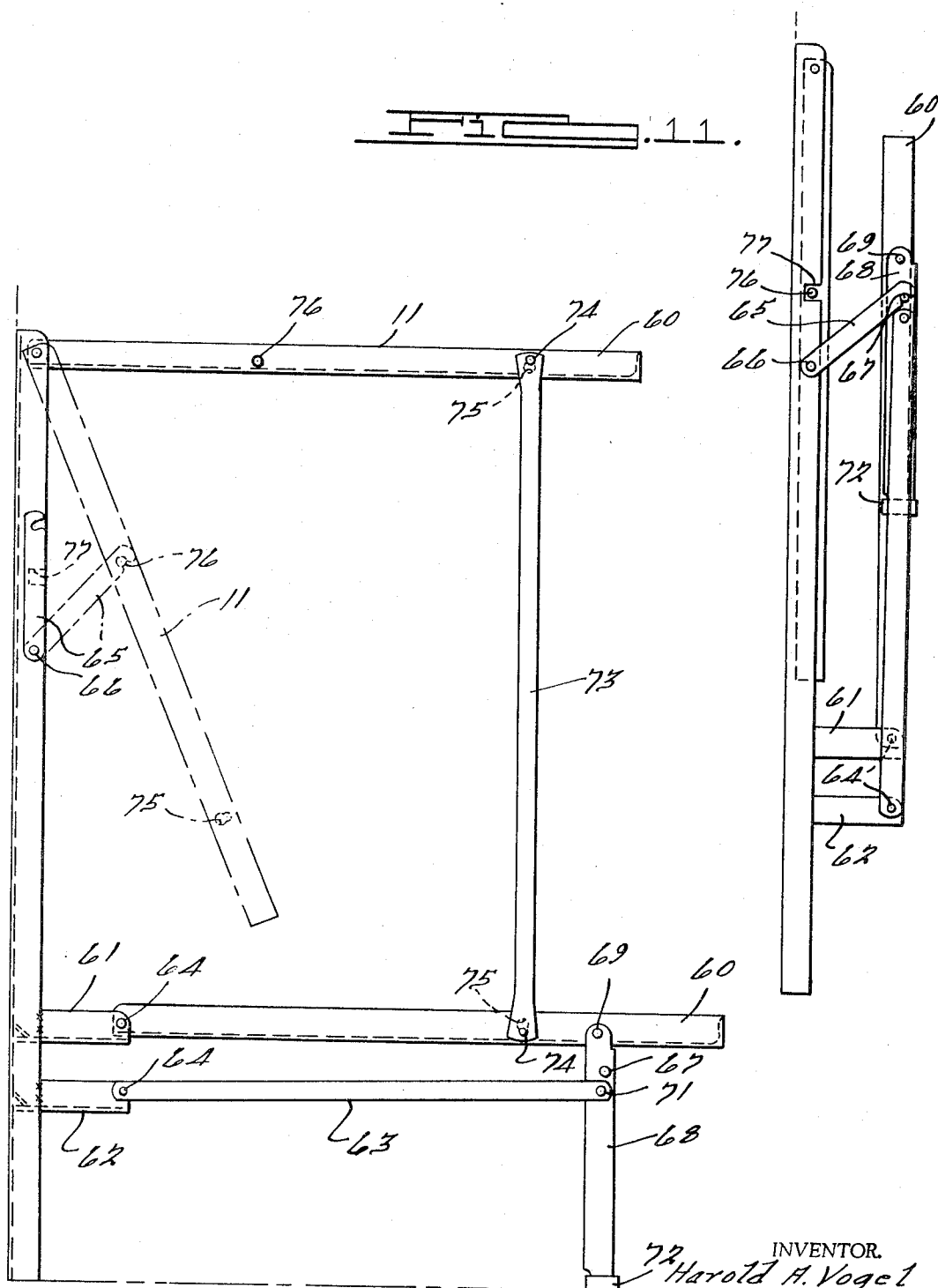


FIG. 10.

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11 Claims. (Cl. 5—9)

This invention relates to bunk beds, and particularly to a bunk bed which is permanently or releasably attached to a wall.

The bunk bed of the present invention embodies a pair of sprung frames which are pivotally mounted one above the other on standards which are secured to a wall or other support. The lower frame has legs pivoted at its outer edge which permit the frame to be swung upwardly against the wall in position to be encompassed by the top frame which swings downwardly thereover. Link means are employed for pivoting the legs to supporting and retracted positions, and bracing links are provided for the top frame for securing it in a horizontal position. Latch means secure the top frame in vertical position when forming a back cushion for the lower bunk bed. The bottom frame is retained in horizontal position when the top frame is swung downwardly to form the sofa. In any of the embodiments, the top and bottom bunks may be supported in horizontal position on legs or on a link arrangement. This permits the top bunk bed to be swung downwardly to form the back of the sofa when the bunk beds are not being slept upon. The bottom may be swung upwardly and the top bunk swung downwardly thereover to form a compact assembly if the unit is not to be utilized for sitting or sleeping.

Accordingly, the main objects of the invention are: to provide a bunk bed assembly from top and bottom sprung frames pivotally supported on supporting brackets located one above the other in sleeping, seating or stored positions; to support a pair of sprung frames one above the other by suitable means which permits the bottom frame to be swung into vertical position and to be encompassed by the top frame when swung downwardly thereover; to provide a flexible arrangement of a pair of spaced bunk beds which may be disposed in horizontal position for sleeping, or the top bunk bed may be disposed vertically to form a back cushion for the bottom bunk bed for seating or to encompass the bottom bunk after it is swung to vertical position for storage, and, in general, to provide a pair of bunk beds pivoted to a supporting frame which is simple in construction and economical of manufacture.

Other objects and features of novelty of the invention will be specifically pointed out or will become apparent when referring, for a better understanding of the invention, to the following description taken in conjunction with the accompanying drawings, wherein:

FIGURE 1 is a broken perspective view of a pair of bunk beds assembled as a unit, embodying features of the present invention;

FIG. 2 is an enlarged, broken plan view of the structure illustrated in FIG. 1;

FIG. 3 is an end view of the structure illustrated in FIG. 1;

FIG. 4 is a view of the structure illustrated in FIG. 1, with the top bunk bed forming a back rest for the bottom bunk bed;

FIG. 5 is a view of the structure illustrated in FIG. 3, with the bunk bed swung into nested relation;

FIG. 6 is a perspective view of a bunk bed, similar to that illustrated in FIG. 1, showing another form of support therefor;

FIG. 7 is a view of the structure illustrated in FIG. 6, with the top bunk bed swung downwardly to form a back for the bottom bunk bed;

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FIG. 8 is a view of the structure illustrated in FIG. 6, with the bunk beds disposed in nested relationship to each other;

FIG. 9 is a sectional view of the structure illustrated in FIG. 1, taken on the line 9—9 thereof;

FIG. 10 is a view of the structure, similar to that illustrated in FIG. 1, showing another form of the invention; and

FIG. 11 is a view of the structure illustrated in FIG. 10, when in nested position.

Referring to FIGS. 1 to 5, a pair of bunk beds is illustrated embodying a lower frame 10 and an upper frame 11 of rectangular form. A plurality of sinuous springs 12 extend across the side members 13 and 14 of the frames, with the ends thereof secured in apertures formed by struck-up portions 15. Suitable wire links 16 interconnect the adjacent springs, with the endmost springs secured by coil springs 18 to the end members 17 of the frame. The coil springs have hooks 19 on the ends which extend within apertures in the frame members 17 and over loops of the sinuous springs 12.

The sprung frame 10 is secured by pivots 21 to extending arms 22 on angle-shaped uprights 23 at each end of the frame. The top frame 11 is secured by pivots 24 to arms 25 extending forwardly from the upright 23. The arms 25, which are of greater length than the arms 24, are interconnected by a cross member 26 made of wood, metal or other material, connected thereto by screws or bolts 27. The front end of the bottom frame 10 has legs 28 of angle section secured thereto by pivots 29 to which links 31 are secured by pivots 32. The opposite end of the link 31 is secured to the uprights 23 by pivots 33. A pair of washers 34 spaces the legs from the frame and a washer 35 spaces the link 31 from the side of the leg to eliminate friction on the pivots 24 and 32. The link 31 pivots the legs 28 against the frame 10 when the frame is raised against the inner flange of the angle uprights 23.

The upper frame 11 is constructed in the same manner as frame 10 and is supported in horizontal position by angle-shaped links 36 which are secured thereto by pivots 37. The lower end of the links has a headed stud 38 therein which projects through a keyhole slot 39 in the outwardly extending flange of the angle uprights 23. The pivots 24 of the arms 25 extend outwardly beyond the pivots 21 of the arms 22 to permit the top frame 11 to extend over the bottom frame 10 when the bottom frame 10 is moved to vertical position to nest within the uprights 23. The uprights 23 may be secured directly to the wall by screws 41 or may be releasably retained in fixed relation thereto by brackets 42 which are fixed to the wall. The lower ends of the uprights 23 are extended outwardly at 44 to be disposed in spaced relation to a scuff board 45 disposed along the bottom of the wall.

Either of the frames 10 or 11, or both, may be welded at all four corners but, as herein illustrated, the front forward corners may have the bottom flange cut in a manner to permit the top flange to be bent in an arc, as at 46 in FIG. 2. This requires only the welding of the rear angle-shaped member 13 to the ends of the U-shaped member 17 of the frame. A mattress pad 40 is applied to each of the frames and is secured thereto so as to be retained in fixed relation to the frames when the frames are moved to vertical position, as illustrated in FIG. 5.

When the top frame is disposed in seating relationship with the bottom frame, a pair of arms or links 47 is secured by pivots 48 to the outwardly extending flange of the uprights 23, having recesses 49 therein which engage pins 51 on the frame 11. The notches 49 retain the top frame 11 in vertical position. When engaging a pin 50 the top frame is retained in sloping position, forming a back with the frame 10 which is braced by

the arms 47. With this arrangement, the two frames 10 and 11 may be used as a sofa when not employed as bunk beds with the frames disposed one above the other.

Referring to FIGS. 6, 7 and 8, a further form of construction is illustrated, that wherein the frame 10 is supported by a set of joined links 53 and 54 which are secured together by pivots 55 and to the uprights 23 by pivots 56, and to the frame 10 by pivots 57. This eliminates the legs 28 and link 31 employed with the construction illustrated in FIGS. 1 to 5 inclusive. FIG. 7 illustrates the assembly wherein the frame 11 has been dropped downwardly into sloping position in seating relationship where it is retained by the pins 47 engaging the links 53. FIG. 8 illustrates the arrangement wherein the frame 10 has been moved to vertical position and the frame 11 has been dropped downwardly in encompassing relation thereto where it is secured by the folded links 53 and 54. In any of the arrangements, the pair of frames 10 and 11 are supported in horizontal or vertical position with the frames in bunk bed relation one above the other or with the top frame 11 disposed in vertical swung-down position relative to the bottom frame 10 to form a back cushion therefor. The uprights 23 for the frames 10 and 11 may be removably secured to a wall by the use of the brackets 42 or may be permanently attached thereto when secured direct to the wall by the screws 43. In either of the arrangements, the frames 10 and 11 are furnished as a unit with the uprights 23 which may be permanently or releasably attached to a wall. The frames are usable as a pair of bunk beds, as a davenport, or retained in nested relationship against the wall so as to occupy a minimum amount of space.

In FIGS. 10 and 11, a further form of the invention is illustrated that were in like frames 60 form the bottom and top bunk beds of the assembly. The uprights 23 have projecting arms 61 and 62 to which the lower bunk bed frame and links 63 are respectively secured by pivots 64. Additional pivots 64 secure the top bunk bed frame to the top portion of the uprights 23 inwardly of the pivots for the bottom bunk bed frame. In this arrangement, when moved to assembled position, the top bunk bed frame is first dropped against the uprights 23 and the bottom bunk bed frame is lifted upwardly to encompass the top bunk bed frame as illustrated in FIG. 11. The bunk bed frames are retained in nested relation by links 65 secured by pivots 66 to the uprights 23. The notch in the links 65 engages pins 67 on the legs 68 which are secured by pivots 69 to the forward portion of the lower bunk bed frame.

The links 63 are secured by pivots 71 to the legs 68 to cause the legs to move from supporting position as illustrated in FIG. 10 to folded position as illustrated in FIG. 11. A floor engaging resilient element 72 is secured to the end of each leg 68 for cushioning the end thereof. Links 73 have pins 74 at the ends which project into keyhole slots 75 in the forward portions of the two bed frames 11 for supporting the top frame in bed position from the bottom frame when in bed position. Pins 76 on the rear portion of the top bed frame are engaged by the notches in the links 65 when the frame is disposed in sloping position as illustrated in dot and dash line in FIG. 10 to retain the frame in seating position, forming a sloping back for the bottom bed frame when employed as a seat. When the top frame is swung down the pins 76 move into slots 77 in the uprights so as to permit the frame to nest therebetween. The structure of FIGS. 10 and 11 is similar to that of FIGS. 1 to 9 in that the frames are movable into bunk bed seating and to nested positions.

What is claimed is:

1. A collapsible assembly movable between a bunk bed position and a seat forming position and comprising: a pair of uprights having parallel arms extending later-

ally therefrom, first and second frames with springs disposed thereacross, said first frame being pivotally connected to said arms, said second frame being pivotally connected to said uprights rearwardly of the pivotal connection of said first frame to said arms so that said frames may be pivoted to the vertical position with said first frame being parallel to and forward of said second frame whereby said first frame encompasses said second frame, first means for supporting one of said frames in a horizontal position, second means for supporting the other of said frames in a horizontal position, and third means for supporting one of said frames in a tilted backrest position to form a seat.

2. An assembly as set forth in claim 1 wherein said first means comprises a first pair of links with each link interconnecting said one frame and one of said other frame and said uprights to support said one frame in said horizontal position.

3. An assembly as set forth in claim 2 wherein said one frame is said first frame which is disposed above said second frame when said frames are in said horizontal positions and said first pair of links interconnect the ends of said first frame and said uprights.

4. An assembly as set forth in claim 3 wherein said third means comprises a second pair of links for interconnecting said first frame and said uprights to support said first frame in said tilted backrest position.

5. An assembly as set forth in claim 4 wherein said second means comprises a pair of legs pivotally connected to said second frame, and a third pair of links pivotally interconnecting said legs and said uprights for pivoting said legs relative to said second frame as said second frame pivots to said vertical position whereby said legs are folded to a position substantially parallel to said second frame.

6. An assembly as set forth in claim 3 wherein said second means includes two pair of foldable links with each pair of foldable links pivotally connected to said second frame and said uprights whereby each pair of foldable links fold together when said second frame is pivoted to said vertical position.

7. An assembly as set forth in claim 6 wherein said third means includes pins projecting from said first frame for engaging said foldable links to support said first frame in said tilted backrest position.

8. An assembly as set forth in claim 2 wherein said one frame is said second frame which is disposed above said first frame when said frames are in said horizontal positions and said first pair of links interconnect the ends of said second frame and said first frame for supporting said second frame in said horizontal position.

9. An assembly as set forth in claim 8 wherein said third means comprises a second pair of links for interconnecting said second frame and said uprights to support said second frame in said tilted backrest position.

10. An assembly as set forth in claim 9 wherein said second means comprises a pair of legs pivotally connected to said first frame, and a third pair of links pivotally interconnecting said legs and said uprights for pivoting said legs relative to said first frame as said first frame pivots to said vertical position whereby said legs are folded to a position substantially parallel to said first frame.

11. A collapsible assembly movable between a bunk bed position and a seat forming position and comprising: a pair of uprights having parallel arms extending laterally therefrom at the upper extremities thereof, first and second frames with springs disposed thereacross, said first frame being pivotally connected to said arms, said second frame being pivotally connected to said uprights below and rearwardly of the pivotal connection of said first frame to said arms so that said frames may be pivoted to the vertical position with said first frame being parallel to and forward of said second frame, a

pair of legs for supporting said second frame in a horizontal position and pivotally connected to opposite ends of said second frame and in spaced relationship to said uprights, a first pair of links pivotally interconnecting said legs and said uprights for pivoting said legs relative to said second frame as said second frame pivots from said horizontal position to said vertical position so that said legs are moved to a folded position substantially parallel to said second frame in said vertical position, a second pair of links which may be removably disposed between said first frame and said uprights for supporting said first frame in a horizontal position, and a third pair of links pivotally connected to said uprights and removably engageable with said first frame for supporting said first frame in a tilted backrest position to form a seat.

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