

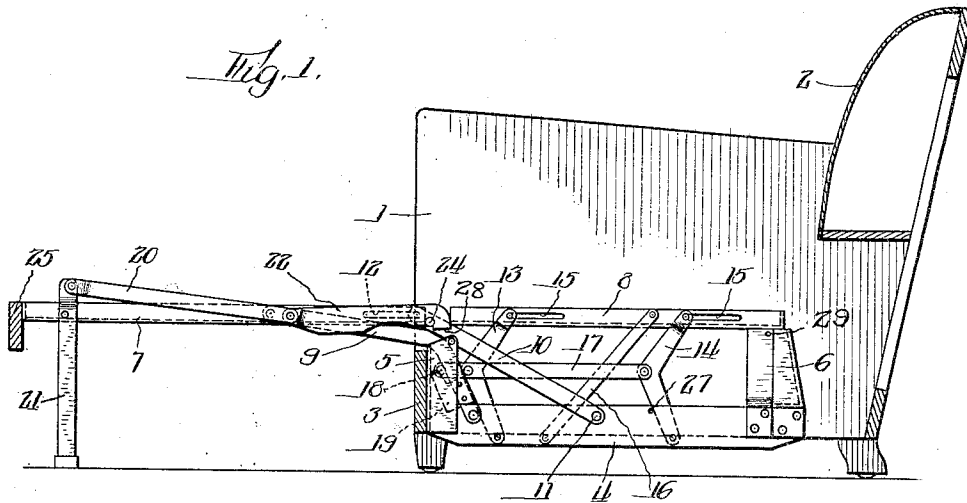
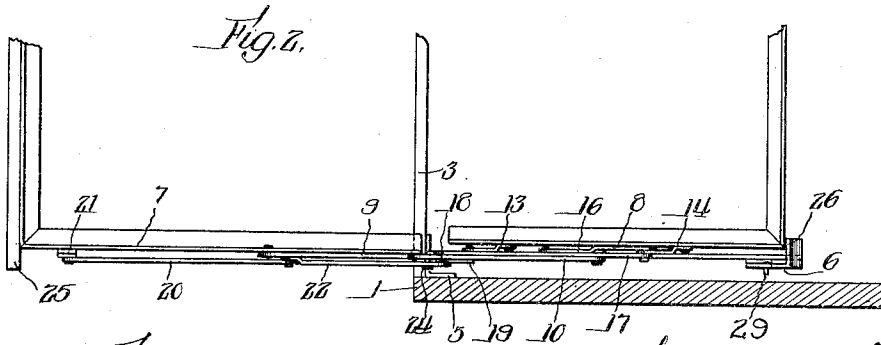
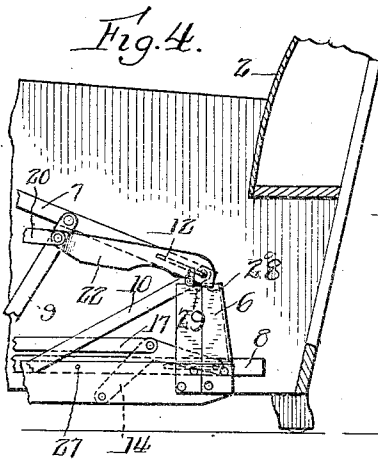
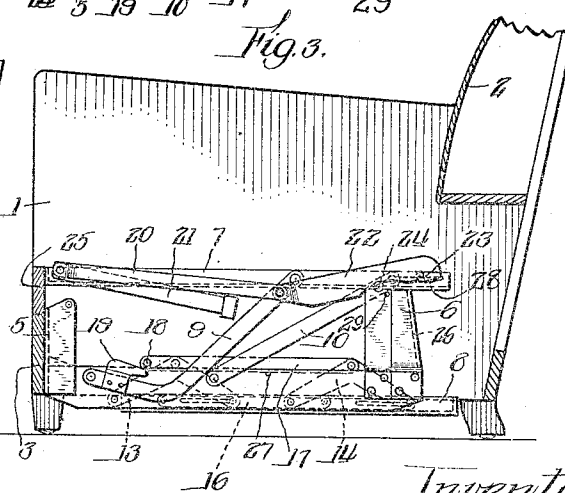
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M. FOX

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FOLDING SEAT AND BED FRAME

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FOLDING SEAT AND BED FRAME

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This invention relates to a folding construction adapted to be used either for a bed davenport or a day bed.

Among the objects of the invention are: to provide a folding construction of this class in which there are two sections foldable one above the other to form a seat and side by side to form a bed surface; to provide for the joint operation of both sections when one of them is moved; to provide a construction which is substantially the same height when open and closed; to provide an improved means for raising the lower section when the upper one is moved in front thereof; to provide an automatic lock for permitting a lost motion connection of one section with respect to the other; and in general to produce the construction herein shown and described.

In the accompanying drawings:

Figure 1 is an elevation with parts shown in section, of a bed davenport to which this invention is applied, and in extended position;

Figure 2 is a sectional plan of the structure shown in Figure 1;

Figure 3 is a sectional view showing the construction in folded condition; and Figure 4 is a sectional view in intermediate position.

One of the difficulties in a folding construction of this kind is to cause the movement of the rear or lower section in such a manner that the upper section will clear the adjacent edge of the lower section in the folding or unfolding operation. This is particularly true when the sections are provided with cushions or with upholstering springs which extend several inches above the plane of the section, and it is desired to bring the two sections sufficiently close together when they are unfolded or in extended position, so that no material aperture will be left between them.

Referring now more particularly to the drawings, the folding structure is mounted

in davenport end frames 1 (only one being shown) connected by an upholstered back 2 and with a fixed front board 3. The folding frame construction is complete in itself and is attached at each end to the end frame 1 and also to the front board 3.

At each end of the folding construction is a cross piece 4 having uprights 5 and 6 at its front and rear, the former of which is also secured to the front board 3, and the latter forms a support for the rear side of the upper section when in folded position, as shown in Figure 3. The folding frame comprises an upper or front section 7 and a lower or rear section 8. The front section is pivotally mounted on levers 9 and 10, of which the former is bent to extend over and contact with the shoulder of the upright 5, and the other lever 10 has a fixed pivot 11 in the cross piece 4 and has a sliding pivotal connection in a slot 12 at the end of the section 7.

The rear section 8 is pivotally mounted by means of the angle levers 13 and 14 to swing from a lower position, as shown in Figure 3, to an upper or elevated position, as shown in Figure 1. The lower ends of the levers have a fixed pivotal connection with the cross piece 4 and have a pivotal and sliding connection in the slots 15 at the ends of the section. Also pivotally connected to the cross piece and to the end of the lower frame 8 is an arm 16 which limits the movement of the section with respect to the slots 15 and the sliding pivotal connection of the levers 13 and 14 therewith.

Connecting the angle levers 13 and 14 at each end is a link 17 for moving them in unison in raising and lowering the rear section 8, and one end of this link projects beyond the lever to which it is connected and carries a projection 18 in the form of a headed rivet adapted to engage one edge of the lever 9 in one direction of movement and to engage a finger or projection 19 secured to and spaced slightly from the lever 9 so that

the projection 18 is substantially confined between this finger and the edge of the lever, but the projection 18 being also adapted to slip out of such engagement in the folded position of the sections, as shown in Figure 3.

5 Pivotally connected adjacent the outermost end of each lever 9 is a link 20, the outer end of which is pivoted to a leg 21 adjacent the outer edge of the bed section 7 so that when
10 this section is extended the leg will project below it in the position to support the section, and when the sections are folded, the leg will be automatically folded at the end of the frame.

15 Also pivotally connected to each lever 9 is a hook member 22 which extends toward the rear side of the front section 7 and has a downwardly opening notch 23 at its rear or free end with a contact surface 28 between
20 the notch and the end of the hook member. This notch is adapted to engage a projection 24 in the form of a headed rivet projecting from the end of the lever 10 adjacent its pivotal and sliding connection in the slot 12
25 of the front section 7 and the surface 26 is adapted to engage a fixed projection 29 from the rear upright 6. The object of this construction is to permit the front section to slide rearwardly in its folded position when
30 disengaged by the projection 29 from the hook member 22, as shown in Figure 4, and to permit a lost motion or forward sliding movement of the front section 7 when it is raised and moved forwardly and an upward
35 rocking movement until the hook member slides over the projection 24 and engages the latter in the notch 23. The effect of this is to vary the length of the lever 10, permitting the section 7 to rock in folding and unfolding,
40 for when the notch 23 engages the projection 24, the levers 9 and 10 are of the same effective length.

Attached to the front side of the sections 7 is a movable front board 25 which rests
45 upon and forms an extension of the fixed front board 3. The rear side of the front section 7 is supported in its folded position by means of an inward extension 26 of the rear upright 6 which is attached to the end
50 frame 1.

In the operation the front section 7 is raised and pulled outwardly and a slight rocking movement is possible upon the horizontal axis formed by the pivotal connection with
55 the levers 9, this rocking and forward movement being possible until the projections 24 slide along the lower edge of the hook members 22 and engage in the notches 23 whereafter the front section will remain substantially parallel. When the levers 9 move forward sufficiently to engage their front edges
60 with the projections 18 of the links 17, the angle levers 13 and 14 will be moved accordingly to raise the rear section 8, the projections 18 sliding downwardly upon the edges

of the levers 9 until they are engaged between these edges and those of the fingers 19. This action continues during the forward movement of the front section, the governing arms 16 causing the angle levers 13 and 14 to slide forwardly in the slots 15 until
70 the rear section is entirely raised, in which position the angle levers 14 will contact with the projections 27 secured in the cross pieces 4 to limit the forward movement of the levers 14 and their connected levers 13.

In the closing operation, the opening operation is substantially reversed, the front section being raised and moved rearwardly upon
80 the levers 9 and 10 and the projections 18 being engaged by the fingers 19 to lower the rear section 8. The disengagement of the projections 24 on the levers 10 from the notches 24 permit the levers 10 to slide forwardly in the notches 12 and allow a slight
85 rocking movement of the section 7 about a horizontal axis which aids in the final folding action.

I claim:

1. In a folding bed construction, an upper
90 and a lower section movable into alignment, the upper section having a pair of supporting levers pivotally connected thereto at each end, one of the levers at each end having a fixed connection with the section and the
95 other lever having a pivotal and sliding connection with the section, and means in connection with the section for engaging the last named lever to hold it against sliding movement at a predetermined time.

2. In a folding bed construction, a rear frame section and means for raising it in a substantially vertical direction, said means including a link with a projection therefrom,
105 a forwardly swinging upper section and levers upon which the section is swingingly mounted, a finger attached to one of the levers for engaging the said projection between it and the edge of the lever for raising the rear section upon the swinging movement of the
110 upper section but constituting a temporary engaging connection between the sections.

3. A structure in accordance with claim 2 in which the finger for engaging the said projection allows the projection to become
115 disengaged when the rear section is folded so that the upper section is then capable of a further free movement.

4. In a folding bed construction, an upper and a lower frame section movable into alignment with each other, a pair of angle levers having a pivotal and sliding connection with the lower section and controlling means for limiting the raising action of the lower section to a substantially vertical direction, a
125 link connecting the angle levers having a projection therefrom, a pair of levers for mounting the upper section to swing in front of the lower section, one of the levers having a finger attached thereto and spaced there-
130

from to engage the projection therebetween
for raising and lowering the lower section,
and means forming a pivotal and sliding con-
nection with the other lever to which the front
5 section is connected and locking means to
limit the sliding connection of the last named
lever with the upper section but permitting a
swinging movement of the upper section
about the pivotal connection of the other
10 lever.

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