S. KARPEN.

SOFA BED.

APPLICATION FILED APR. 5, 1909.

956,972.

Patented May 3, 1910.

3 SHEETS—SHEET 1.

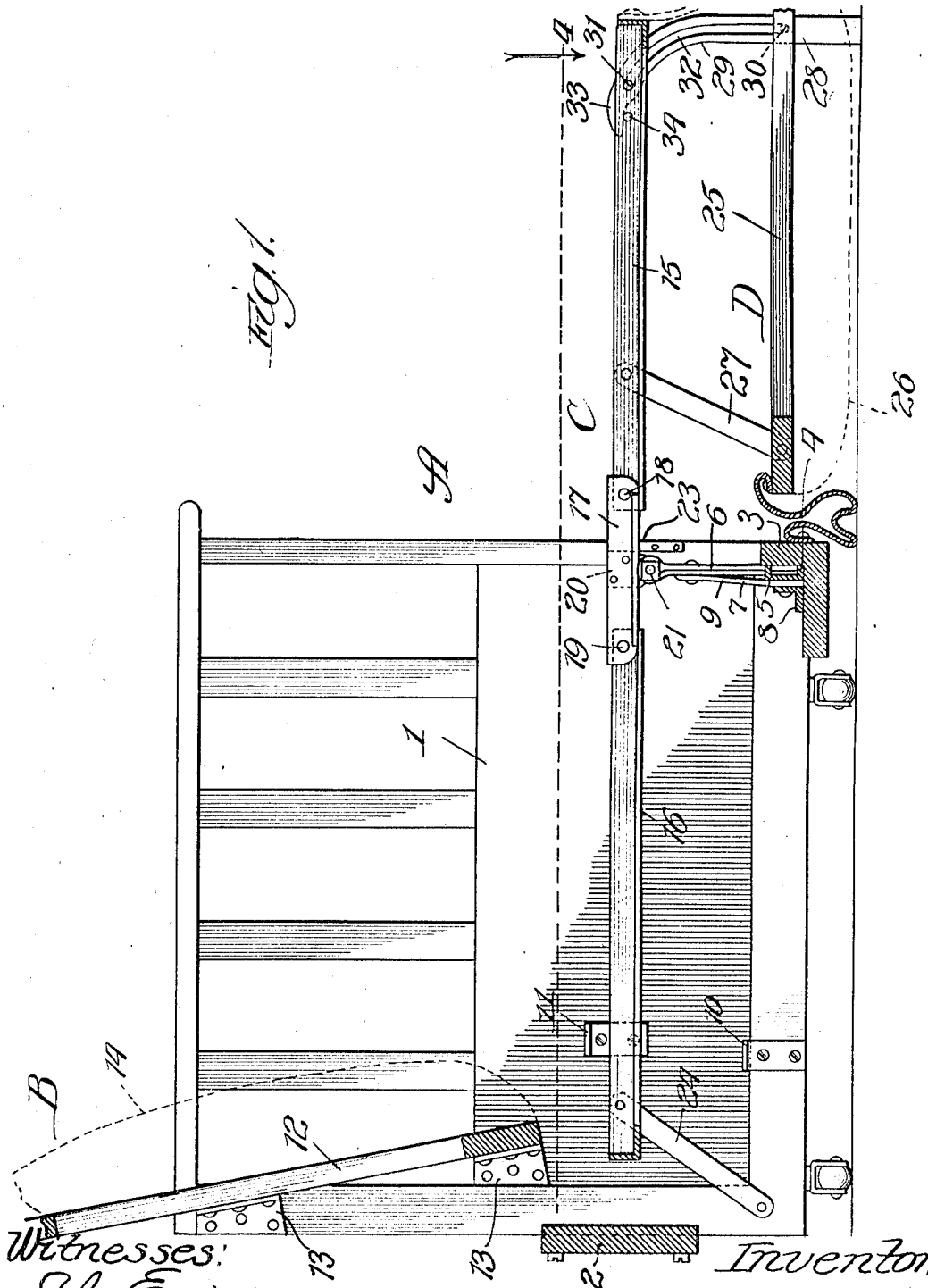

Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 3.

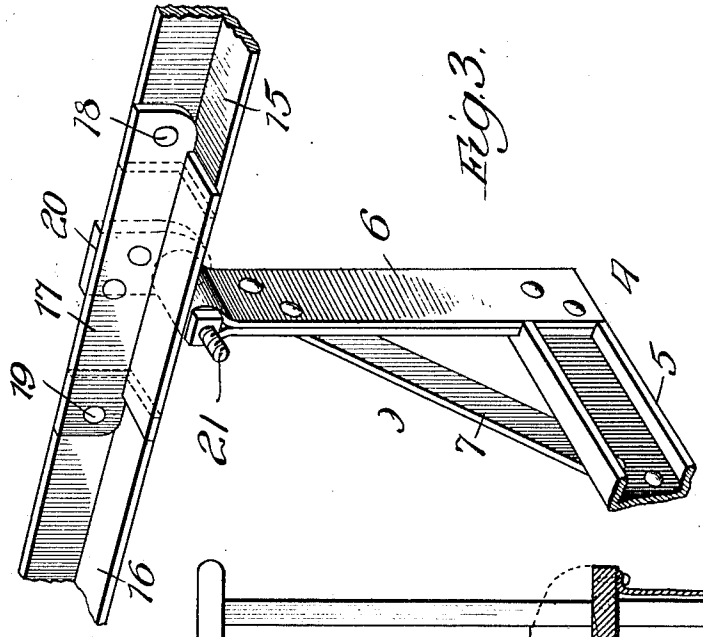
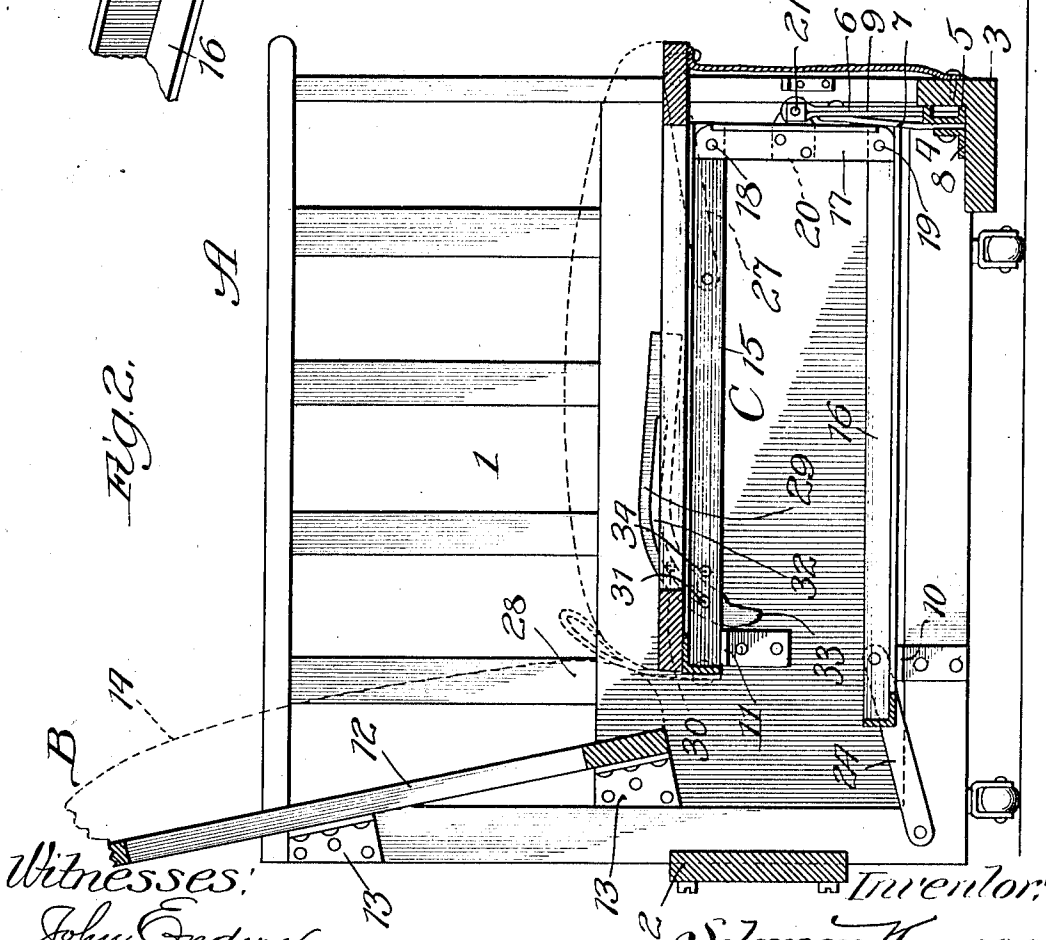


Fig. 2.



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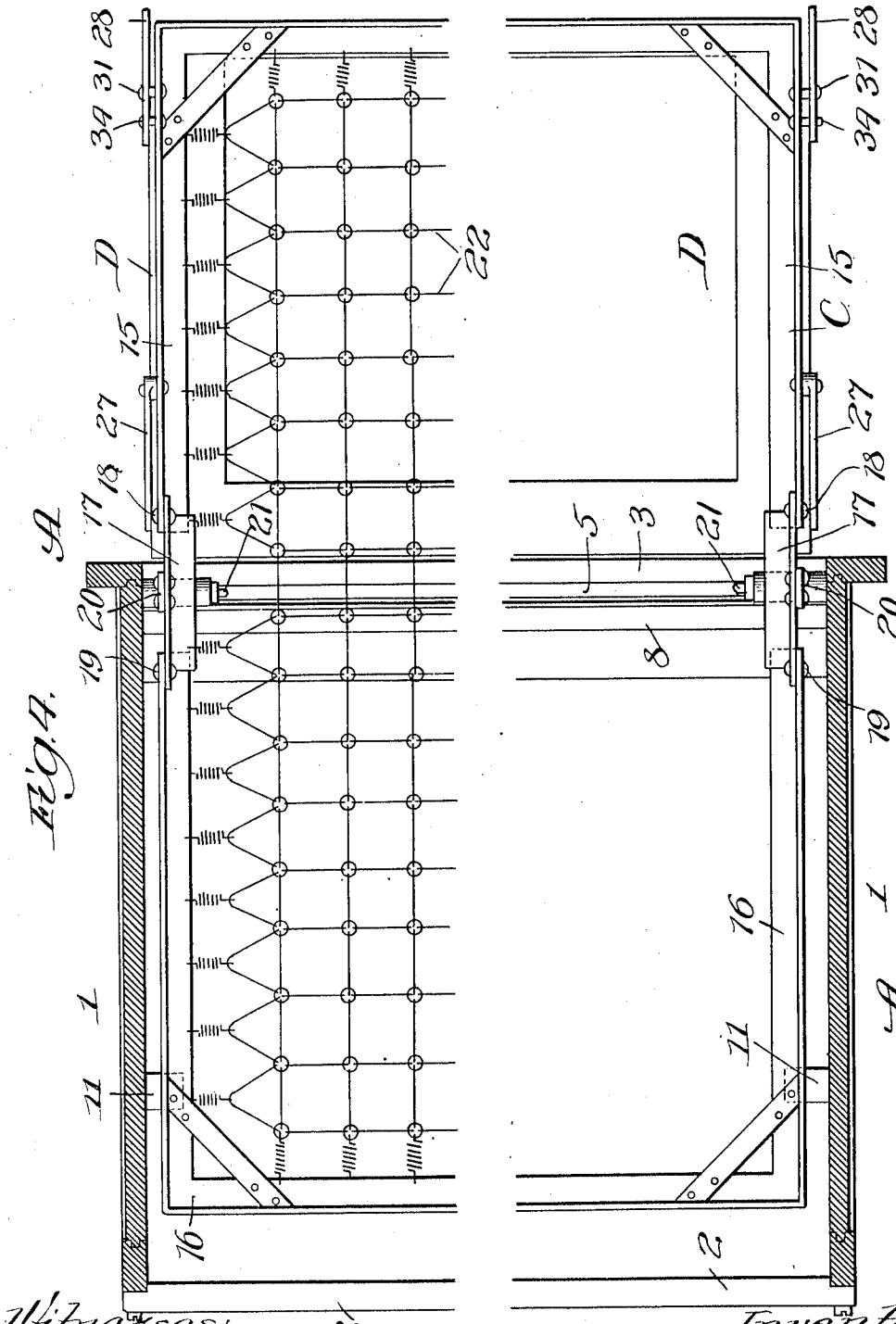

FIG. 4.

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UNITED STATES PATENT OFFICE.

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SOFA-BED.

956,972. Specification of Letters Patent. Patented May 3, 1910.

Application filed April 5, 1909. Serial No. 488,095.

To all whom it may concern:

Be it known that I, SOLOMON KARPEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sofa-Beds, of which the following is a specification.

My invention relates particularly to combination sofas and beds, or combination couches and beds, in which a foldable mattress frame is normally housed within the main frame beneath the seat of the sofa and equipped with a flexible bed-bottom, or wire mattress, the parts being so related as to afford room between the sections of the folded mattress for the bed, that is, the mattress-pad, bed-linen and covers.

My primary object is to provide an improved construction of the character indicated having the attributes of simplicity and durability and which is readily convertible from sofa-form to bed-form and vice versa.

It may be preliminarily stated that in the preferred construction of the invention, which is illustrated in the accompanying drawing, there are employed a main frame, a forwardly-swinging seat, a stationary back and a folded bed-frame normally housed within the main frame beneath said seat, the seat serving as a medium for elevating and extending the bed-frame when the seat is swung to occupy a substantially horizontal position in front of the main frame. The seat is so linked to the front section of the bed-frame, or mattress-frame, as to be capable of dropping with relation to said front-section when the bed is unfolded, so that the seat structure will not interfere with the comfortable use of the bed. Ordinarily, the bed is secured to the mattress-frame before the structure is folded into sofa-form, and the relation of the sections of the mattress-frame is such as to afford space for the folded bedding between the sections of the mattress-frame. When the structure is converted to bed-form, the bedding, that is, the mattress-pad, bed-linen and covers, is spread out when the mattress-frame is extended. For clearness of illustration, the bedding is not shown in the accompanying drawings.

In the accompanying drawings—Figure 1 represents a sectional view of my improved sofa-bed, with the mattress-frame, or bed-frame, shown in the extended position; Fig. 2, a similar section showing the structure folded into sofa-form; Fig. 3, a broken perspective view showing a truss-member employed as a part of the main-frame, upon the vertically-disposed arms of which the central section of the folding bed-frame, or mattress-frame, is pivotally mounted; and Fig. 4, a broken plan sectional view showing the structure in bed-form.

In the construction illustrated, A represents a main-frame; B, a stationary back supported by the end-standards of the main-frame; C, a folding bed-frame, or mattress-frame; and D, a seat movably connected with the front-section of the bed-frame, beneath which the bed-frame is normally housed when the structure is in sofa-form.

The frame A may be of any suitable construction. As shown, it comprises end-standards 1 which constitute the arms of the sofa; a rear connecting-member 2; a front-connecting-member 3, which may be of wood and which serves to connect the lower front portions of the end-standards; a bed-frame truss and standard 4 comprising a longitudinal channel-member 5 and arms or standards 6 rising from the ends thereof and secured by braces 7; and an angle-bar 8 located adjacent to the channel-bar and having its end-portions connected, by braces 9, with the uprights 6. The end-standards are equipped on their inner surfaces with lower stops 10 and upper stops 11 which serve, respectively, to support the rear bed-frame section and the front bed-frame section when the bed is in the folded condition.

The back B, when employed, may be connected with the end-standards 1 in any desired manner. As shown, the back comprises a frame 12 which is rigidly connected with the end-standards by members 13; and an upholstered pad 14 (shown in dotted lines) applied to the frame 12.

The bed-frame C, as illustrated, comprises a substantially U-shaped front section 15; a substantially U-shaped rear section 16; and an intermediate section 17 comprising end-members which are joined by pivots 18 to the arms, or end-members, of the front section 15, and by pivots 19 to the arms, or end-members, of the section 16. The end-members of the intermediate section 17 have applied thereto blocks or brackets 20 whose lower ends (referring to the extended position of the bed) depend beneath said end-members and are equipped with inwardly-

extending pivots, studs, or bolts, 21, which are supported in eyes with which the uprights 6 are equipped at their upper ends. The mattress-frame, or bed-frame, has applied thereto a flexible bed-bottom, or wire mattress, 22. As shown, the end-members of the front and rear bed-frame sections are angle-bars and the end-members of the intermediate section 17 are angle-bars. The arrangement is such that the horizontal flanges of the end-members of the section 17 rest upon the horizontal flanges of the end-members of the sections 15 and 16 when the bed is in the extended position. If desired, stops 23 may be applied to the end-standards 1 to limit the forward swing of the intermediate bed-section 17. The rear portion of the rear bed-section 16 is connected, by links 24, with the lower rear corners of the end-standards 1.

The seat D comprises a frame 25 and an upholstered pad 26, which is shown in dotted lines. The front portion of the seat-frame is connected, by links 27, with the end-members of the front bed-section 15. The rear portion of the seat is equipped with legs 28 having curved extensions 29 connected with the swinging edge of the front bed-section 15. The connections are made by means of pivots or studs 30 and 31, the stud 31 being adapted to work in a curved slot 32 in the curved extension 29. The curved extension 29 has an extremity 33 provided with a shoulder adapted to engage a stud 34 with which the front bed-frame section 15 is equipped. In the unfolded condition of the structure, the seat is suspended at a distance beneath the frame-section 15, while the legs 28 serve as supports for the outer or free edge of said section 15. In the sofa-form, the seat collapses with relation to the frame-section 15 and is supported directly thereon, as shown in Fig. 2. The links 27 fold to permit the seat to approach the frame 15, and the legs 28 slide with relation to the studs 31, the projecting portions of the legs being practically hidden at the ends of the cushions of the seat and back, as will be understood from Fig. 2.

The operation will be readily understood from the foregoing description. The bed is usually made up before the structure is converted to sofa-form, the mattress proper, bed-linen and covers being secured in any suitable manner to the mattress-frame, so that when the mattress-frame is folded the bedding will be folded therewith. The conversion is effected by swinging the seat D upwardly and rearwardly from the position shown in Fig. 1 to the position shown in Fig. 2. In this operation the bed is folded, and the seat collapses with relation to the section 15 of the mattress frame and rests thereon, the stops 11 serving to support the free edge of the front mattress-frame section. As appears from Fig. 2, there is ample room afforded between the mattress-frame sections 15 and 16 to accommodate the bedding in folded condition. When the conversion to bed-form is desired, this may be effected by swinging the seat upwardly and forwardly, thereby unfolding the bed and dropping the seat with relation to the frame-section 15. In the unfolding operation, the intermediate bed-section 17 is turned upon the pivots 21, and the rear bed-section 16 is raised to the elevated position shown in Fig. 1. In the folding operation the intermediate bed-section 17 assumes the vertical position and the rear bed-section is lowered to rest upon the stops 10.

The construction described is simple, durable, and may be manufactured at a very moderate cost. In this construction it is to be observed, the intermediate bed-section 17 is pivotally supported upon the fixed or stationary truss 4; and in the folding operation, the rear bed-section is lowered when the rear end of the intermediate section 17 swings downwardly, and the rear bed-section is raised by a sort of cantaliver action, when the structure is converted to bed-form.

The foregoing detailed description has been given for clearness of understanding only, and no undue limitation is to be understood therefrom, but the appended claims are to be construed as broadly as is permissible in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a structure of the character set forth, the combination of a frame, a seat adapted to swing forwardly, a bed-truss located beneath the front portion of said seat and carried by said frame, an intermediate bed-section pivotally mounted on said truss, front and rear bed-sections pivotally connected with said intermediate section and normally housed beneath said seat, links pivotally connecting the front portion of said seat with the front bed-section, and legs connected with the rear portion of said seat and with the front bed-section, said legs having slidable engagement with one of the members with which they are connected, so that the seat may drop away from the front bed-section when the bed is unfolded.

2. In a structure of the character set forth, the combination of a main frame, comprising end-standards constituting arms for a sofa, a front connecting-member joining the lower front corners of said standards, bed-supporting standards rising from said front connecting-member adjacent to said end-standards, an intermediate bed-section pivotally supported on said bed-standards, front and rear bed-sections pivotally connected with said intermediate section, the front-section normally occupying a position above the rear-section, and a seat surmount-

ing the front bed-section in the folded condition of the bed and linked to said front bed-section.

3. In a structure of the character set forth, the combination of a main frame, a seat, a folded bed normally housed in said main frame beneath said seat, links connecting the front portion of said seat with the front section of said bed, and legs pivotally connected with the rear portion of said seat and having pin and slot connection with the front bed-section, for the purpose set forth.

4. In a structure of the character set forth, the combination of a main frame, a seat adapted to swing forwardly, a truss supported by said frame beneath the front portion of said seat, an intermediate bed-section pivotally connected with said truss and normally occupying a substantially vertical position beneath the front portion of said seat, front and rear bed-sections pivotally connected with said intermediate section and occupying a folded relation beneath said seat, links connecting the front portion of said seat with the front bed-section near the pivots of the front bed-section, and legs having pivotal connection with the rear portion of said seat and having pin and slot connection with said front bed-section near the free edge thereof.

5. In a structure of the character set forth, the combination of a main frame comprising end-standards and connecting members, a stationary back connected with said end-standards, a seat adapted to swing forwardly, a bed-truss supported on said frame beneath the front portion of said seat, a folded bed normally housed beneath said seat and comprising an intermediate section pivoted on said truss and front and rear sections pivotally connected with said intermediate section, and connections between said seat and the front bed-section permitting the seat to drop away from the front bed-section when the structure is converted into bed-form.

6. In a structure of the character set forth, the combination of a frame, bed-supporting members carried thereby, an intermediate bed-section pivotally supported on said bed-supporting members and normally occupying a substantially vertical position in the folded condition of the structure, a rear bed-section pivotally connected at its front portion with said intermediate bed-section, stops carried by said frame supporting the rear portion of the rear bed-section in the folded condition of the structure, a front bed-section, stops carried by said frame and supporting the free edge-portion of the front bed-section in the folded condition of the structure, and a seat movably connected with the front bed-section and beneath which said bed-sections are normally housed.

7. In a structure of the character set forth, the combination of a main frame, comprising end standards constituting arms for a sofa, a front connecting-member joining the lower front portions of said standards, an intermediate bed section, bed-supporting standards spacing said intermediate section from the front connecting member when in the open position of the bed, said intermediate section being pivoted to said bed supporting standards, front and rear bed sections pivotally connected with said intermediate section, the front section normally occupying a position above the rear section, and a seat surmounting the front bed section in the folded condition of the bed and linked to said front bed-section.

8. In a structure of the character set forth, a main frame, a seat, a bed consisting of front, rear, and intermediate sections housed beneath the seat, and connected to said main frame, substantially rigid links connecting the seat to the front section and legs connected to the seat and adapted to support the seat beneath the front section in the open position of the bed.

SOLOMON KARPEN.

In the presence of—
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R. A. RAYMOND.