951,531.

S. KARPEN.

SOFA BED.

APPLICATION FILED MAR. 26, 1909.

Patented Mar. 8, 1910.

3 SHEETS—SHEET 1.

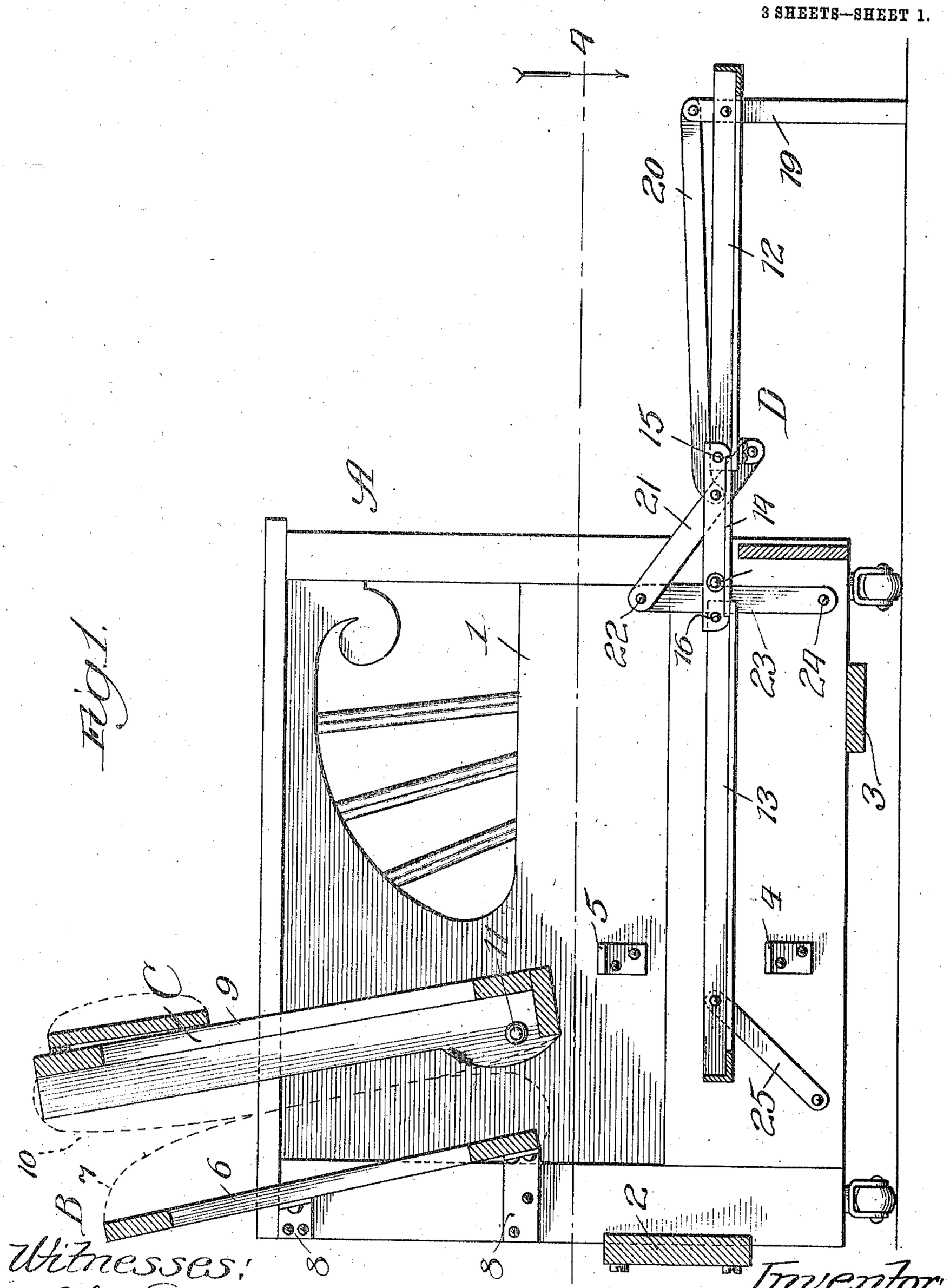

Fig. 1.

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Fig. 3.

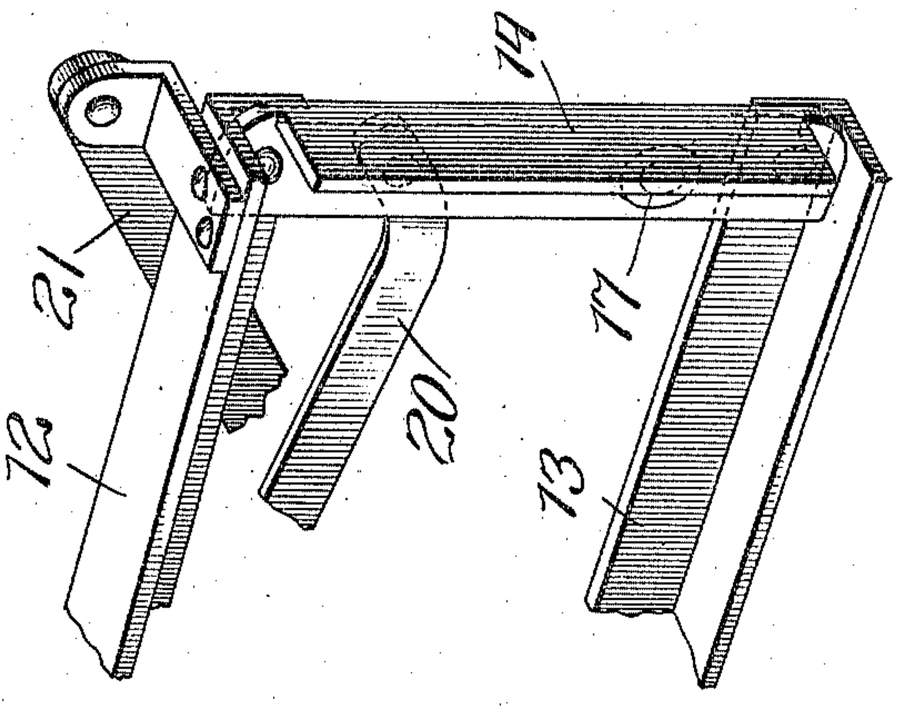
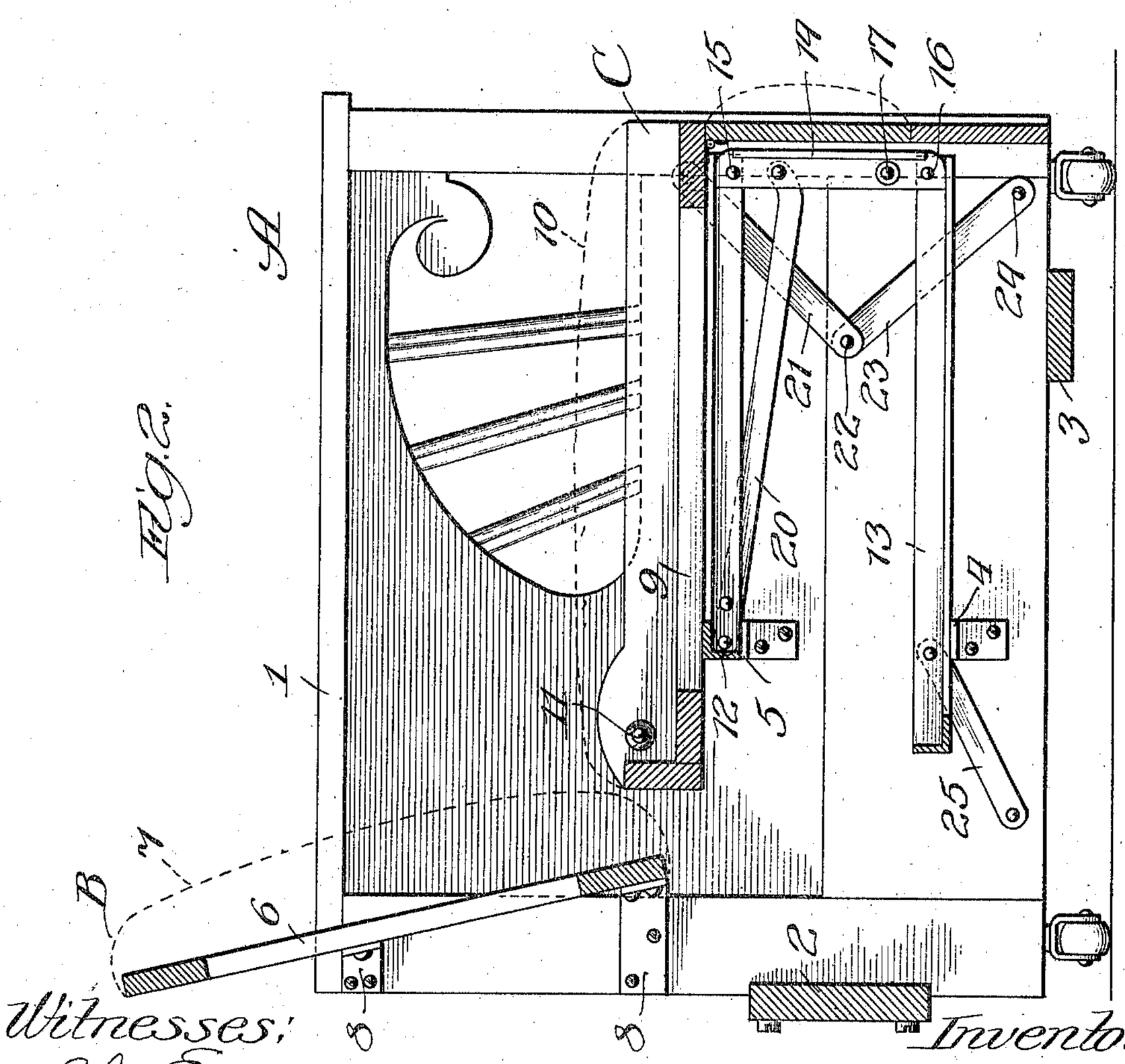


Fig. 2.



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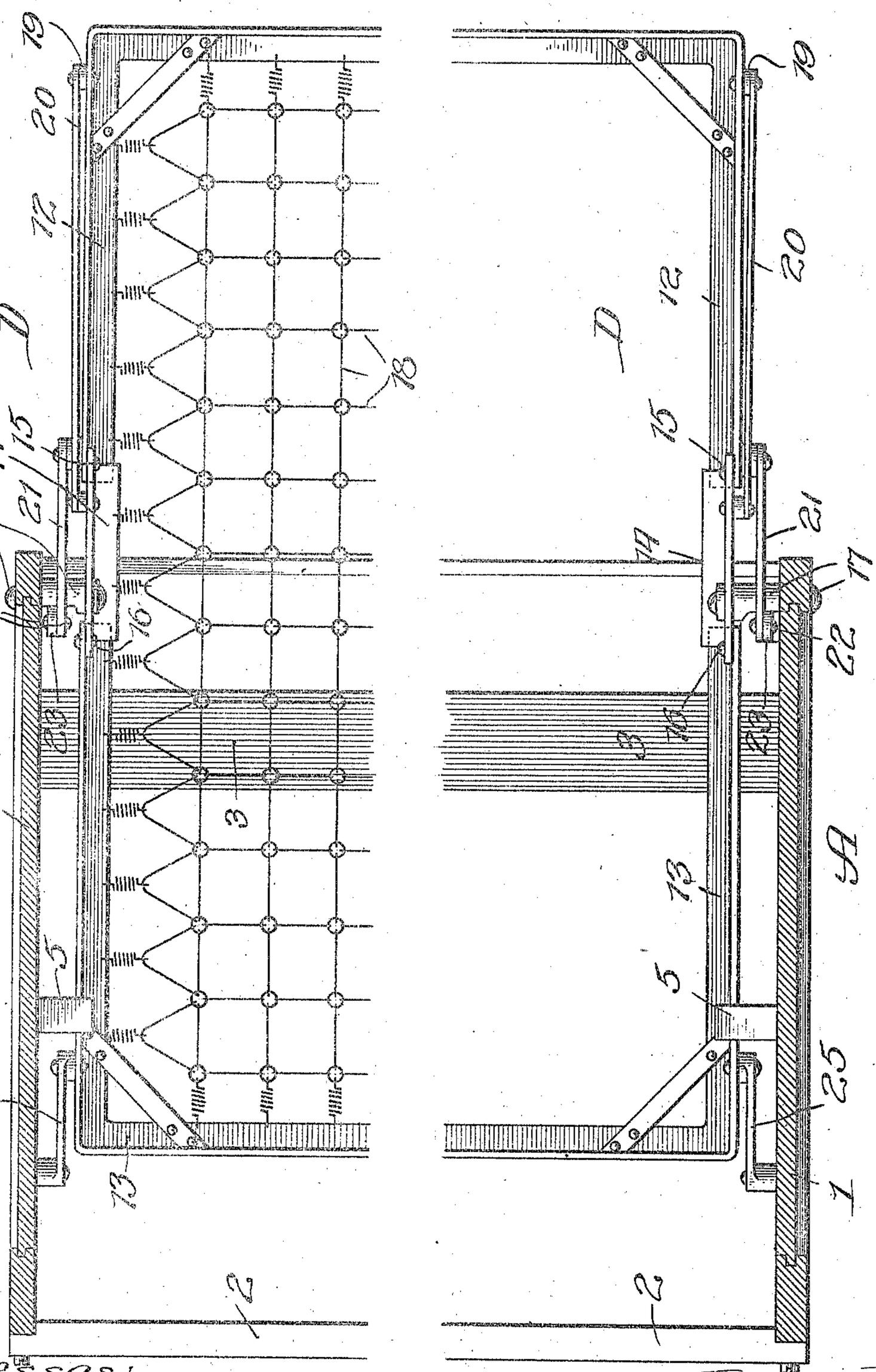

Fig. 4.

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UNITED STATES PATENT OFFICE.

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SOFA-BED.

951,531. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed March 26, 1909. Serial No. 485,975.

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, 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 bedding, *i. e.*, the mattress-pad, or mattress proper, bed linen, and covers.

My primary object is to provide an improved construction of the character indicated which is durable, handy of operation, capable of being manufactured at a very moderate cost, and which affords a comfortable sofa of pleasing appearance when in the sofa form, and which affords a thoroughly comfortable bed when in the bed form.

It may be preliminarily stated that, in the preferred construction of the invention which is illustrated in the accompanying drawings, there are employed a main frame having end-standards which constitute the arms of the sofa; a stationary back carried by said end-standards; a rearwardly swinging seat pivotally mounted on the frame and adapted to assume a standing position adjacent to the back; and a folded bed normally housed in said frame beneath said seat, said folding bed comprising front and rear bed-sections bearing a superposed relation to each other in the folded condition of the structure, and an intermediate bed-section which is pivoted on the frame and which is pivotally connected with the front and rear bed-sections, said intermediate bed-section normally occupying a substantially vertical position beneath the front portion of the seat.

In the accompanying drawings—Figure 1 represents a sectional view of a combined sofa and bed constructed in accordance with my invention, the structure being shown in bed form; Fig. 2, a similar section showing the structure in sofa form; Fig. 3, a broken perspective view showing the folded relation of the front, rear and intermediate sections; 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 back mounted thereon; C, a rearwardly swinging seat pivotally connected with the main frame; and D, a folding bed normally housed in the main frame beneath the seat of the sofa.

The frame A may be of any suitable construction and design. As shown, it comprises end-standards 1; a rear connecting member 2; and a lower front connecting member 3. The end-standards 1 are equipped on their inner surfaces with stops, or rests, 4 and 5, adapted, respectively, to support the rear and front bed-sections in the folded position.

The back B may be of any suitable construction. As shown, it comprises a frame 6 and an upholstered pad 7, as indicated by dotted lines, the frame 6 being rigidly connected with the rear portions of the end-standards of the main frame by angle-members 8. Preferably, the back inclines rearwardly and upwardly somewhat, as shown.

The seat C, as shown, comprises a frame 9 and an upholstered pad 10, which is indicated by dotted lines. The seat is connected near its rear edge with the main frame by pivots 11, and the seat is adapted to swing rearwardly and assume a standing position leaning against the back of the sofa, as shown in Fig. 1.

The folding bed D comprises a front section 12, a rear section 13, and an intermediate section 14. The front and rear sections are of substantially U-shape and have their arms connected, by pivots 15 and 16, with the end members of the intermediate section 14. The end members of the intermediate section 14 are connected with the end-standards 1 of the main frame by pivot-bolts 17, the connections being such as to prevent the end members of the intermediate section from being drawn toward each other when the bed bottom is under tension. The members of the bed-frame are of angle-bar construction, and the horizontal flanges of the end members of the intermediate section 14 are adapted to bear upon the horizontal flanges of the end members of the front and

rear sections, as shown in Fig. 1, in the extended position of the structure, whereby the front and rear sections are supported with relation to the intermediate section by cantaliver action. A flexible bed-bottom, or wire mattress, 18, is applied to the folding bed-frame. Considering the structure in its folded condition, the pivotal connections 17 between the intermediate bed-section and the main frame are located near the lower ends of the end members of said intermediate section, as appears from Fig. 2. The front bed-section 12 is equipped near its free edge with pivotally connected legs 19 which are provided at their upper ends with extensions connected by links 20 with the end members of the intermediate section 14. Pivotally connected with the inner portions of the end members of the front bed-section 12, are links 21, which are connected by pivots 22 with the upper ends of links 23, whose lower ends are connected by pivots 24 with the end-standards 1 of the main frame at a distance beneath and somewhat inside the plane of the pivotal connections 17 of the intermediate section of the bed. A pair of links 25 connect the rear portion of the rear bed-frame section 13 with the lower rear portions of the end-standards 1 of the main frame.

The operation will be readily understood from the foregoing description. The bed will usually be made up while the structure is in the unfolded condition shown in Fig. 1, prior to converting the structure to sofa form. After the mattress proper, bed-linen and covers have been applied, they are secured to the folding bed-frame so as to fold and unfold therewith.

In converting to sofa form, the front bed-section is swung from the position shown in Fig. 1 to the position shown in Fig. 2, in which operation the legs 19 are folded with relation to the front bed-frame section, and the intermediate bed-section 14 is caused to assume a vertical position. In this operation, also, the pivots 16 swing downwardly and the rear bed-section 13 is lowered so as to rest upon the stops 4. After the bed has been folded, the seat may be lowered to the horizontal position, thereby housing the folded bed beneath the seat. Any suitable expedient (none shown) may be employed for concealing the folded bed at the front of the sofa. A front-piece 26, connected by hinges 27 with the lower surface of the front portion of the seat-frame is shown.

In the operation of converting from sofa form to bed form, the seat is lifted to the standing position so as to rest against the back, and the bed is then unfolded by swinging the section 12 from the position shown in Fig. 2 to the position shown in Fig. 1, in which operation the intermediate section 14 is swung on the pivots 17 and operates to elevate the rear section 13. In the extended position of the bed, the links 23 assume an upright position bearing against the pivotal connections 17, and the links 21 serve as inner supports for the front bed-section 12.

For clearness of illustration, the bedding is not shown in the drawings, but it is well understood in the art how the bedding may be applied and secured to the foldable mattress-frame, or bed-frame.

The construction described is simple, durable, and may be manufactured at a very moderate cost. The simplicity of structure and convenience of operation is contributed to materially by the employment of the rearwardly swinging seat adapted to assume a standing position adjacent to the back of the sofa. The mechanism by which the rear bed-section is elevated in the operation of unfolding the bed and the mechanism by means of which the front bed-section is supported in the extended position, are likewise of simple construction. While, in this construction, the rear portion of the rear mattress-frame section extends some distance in the rear of the pivotal portion of the seat when the bed is extended, it is observed that the bed is located a sufficient distance beneath the pivotal portion of the seat to prevent the rear portion of the seat from interfering with the occupancy of the rear section of the bed.

The foregoing detailed description has been given for clearness of understanding only. Therefore, no undue limitation should be understood therefrom, but the appended claims should be construed as broadly as 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 main frame comprising end-standards and a back fixedly secured between the rear portions of said end-standards, a seat pivotally secured at its rear portions to said end-standards and adapted to assume a standing position adjacent to said back, and an independent folding bed comprising an intermediate bed-frame section having end-members normally occupying a substantially vertical position, pivotal connections between the end-members of said intermediate section and said frame at intermediate points of end-members, pivotal connections between the end-members of said intermediate section and said front and rear sections, a flexible bed-bottom applied to said bed-frame sections, and means connected with the front bed-frame section and serving to elevate the rear bed-frame section to the bed-forming position in the operation of unfolding the front bed-frame section.

2. In a structure of the character set forth, the combination of a main frame, a rear-

wardly swinging seat, front and rear bed-frame sections, an intermediate bed-frame section pivotally supported on the main frame and pivotally joined to said front and rear bed-frame sections, legs foldably connected with the front bed-frame section near the free edge thereof, and links connected with said front bed-frame section and with the main frame and adapted to aid in the support of the front bed-frame section in the extended position of the structure.

3. In a structure of the character set forth, the combination of a main frame, a rearwardly swinging seat, and a folded bed normally housed in said frame beneath said seat and comprising front and rear bed-frame sections, an intermediate bed-frame section pivotally supported on the main frame and pivotally joined to the front and rear bed-frame sections, links connecting the rear portion of the rear bed-frame section with the main frame, legs pivotally connected with the front portion of the front bed-frame section, a pair of links connected with the front bed-frame section near the pivots thereof, links pivotally connected with the main frame and with said first-named links and adapted to assume a substantially standing position when the bed is in the extended position, and bearings limiting the outward swing of said second-named links.

4. In a structure of the character set forth, the combination of a main frame comprising end-standards and a sofa-back secured to the rear portions of said end-standards, a sofa-seat pivotally connected with said frame near the lower portion of said back and adapted to assume a standing position adjacent said back, and an independent folded bed normally housed in said frame beneath said seat when the structure is in the closed condition, said bed comprising a rear bed-section linked to said frame and adapted to rise with relation to said frame, and a superposed front bed-section foldably related to said rear bed-section and linked thereto, whereby the bed will be adjusted as a whole when the front section is swung forwardly after the seat has been swung rearwardly to a standing position and the bed will occupy an extended position mainly in advance of said seat when the latter is in a standing position.

SOLOMON KARPEN.

In presence of—
A. U. THORIEN,
J. G. ANDERSON.