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SOFA DAVENPORT.

APPLICATION FILED OCT. 15, 1910.

990,146.

Patented Apr. 18, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

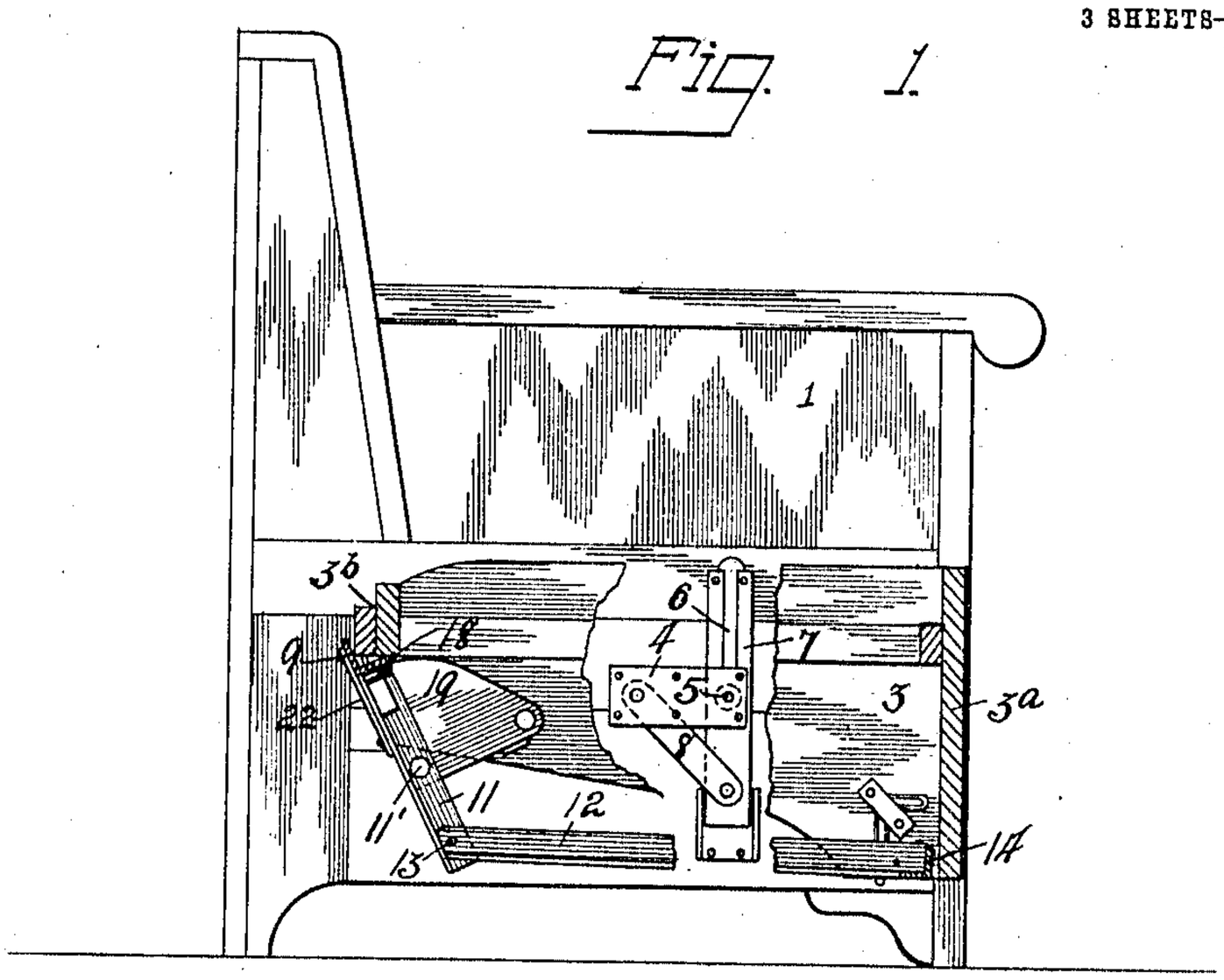
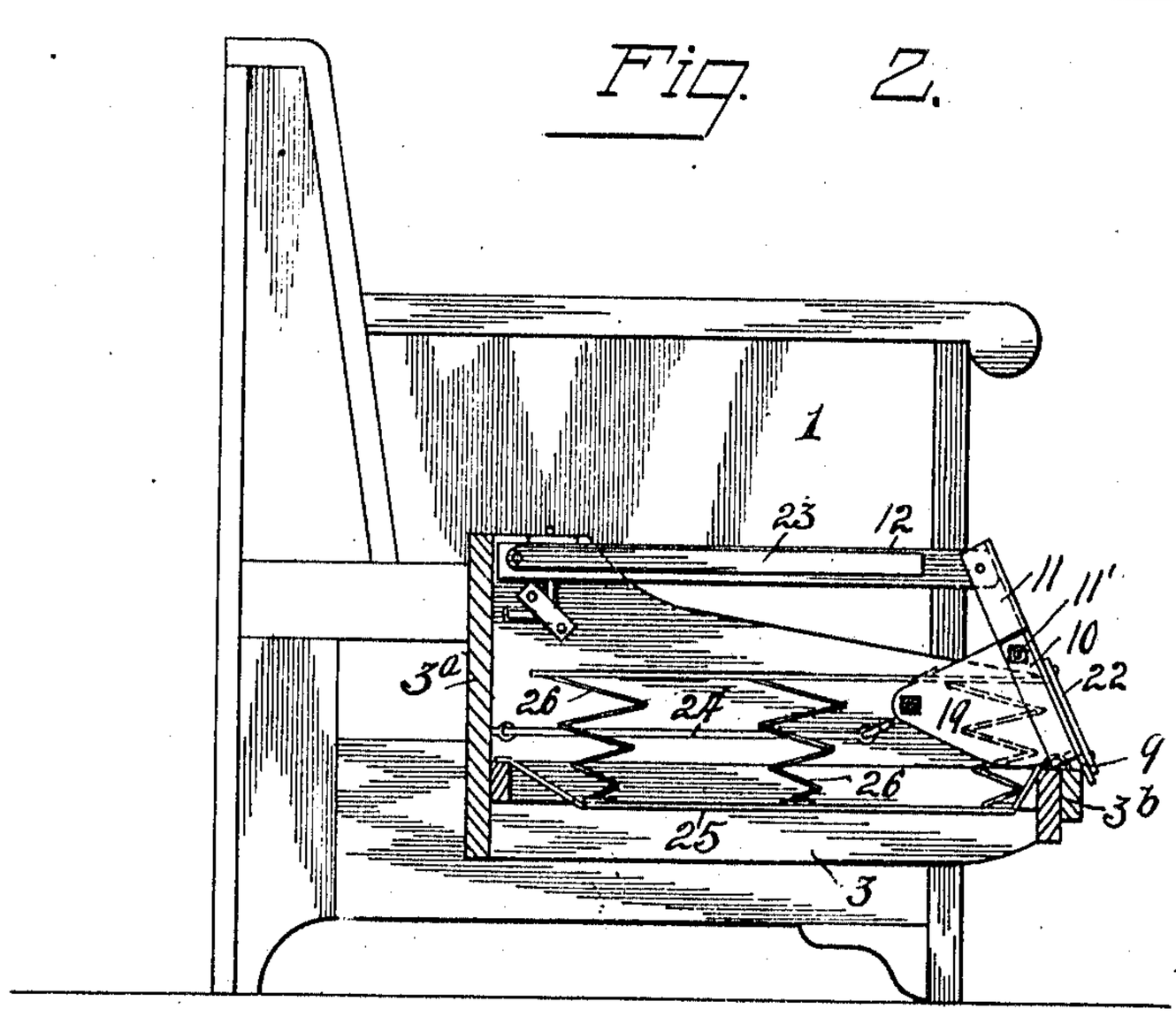



Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

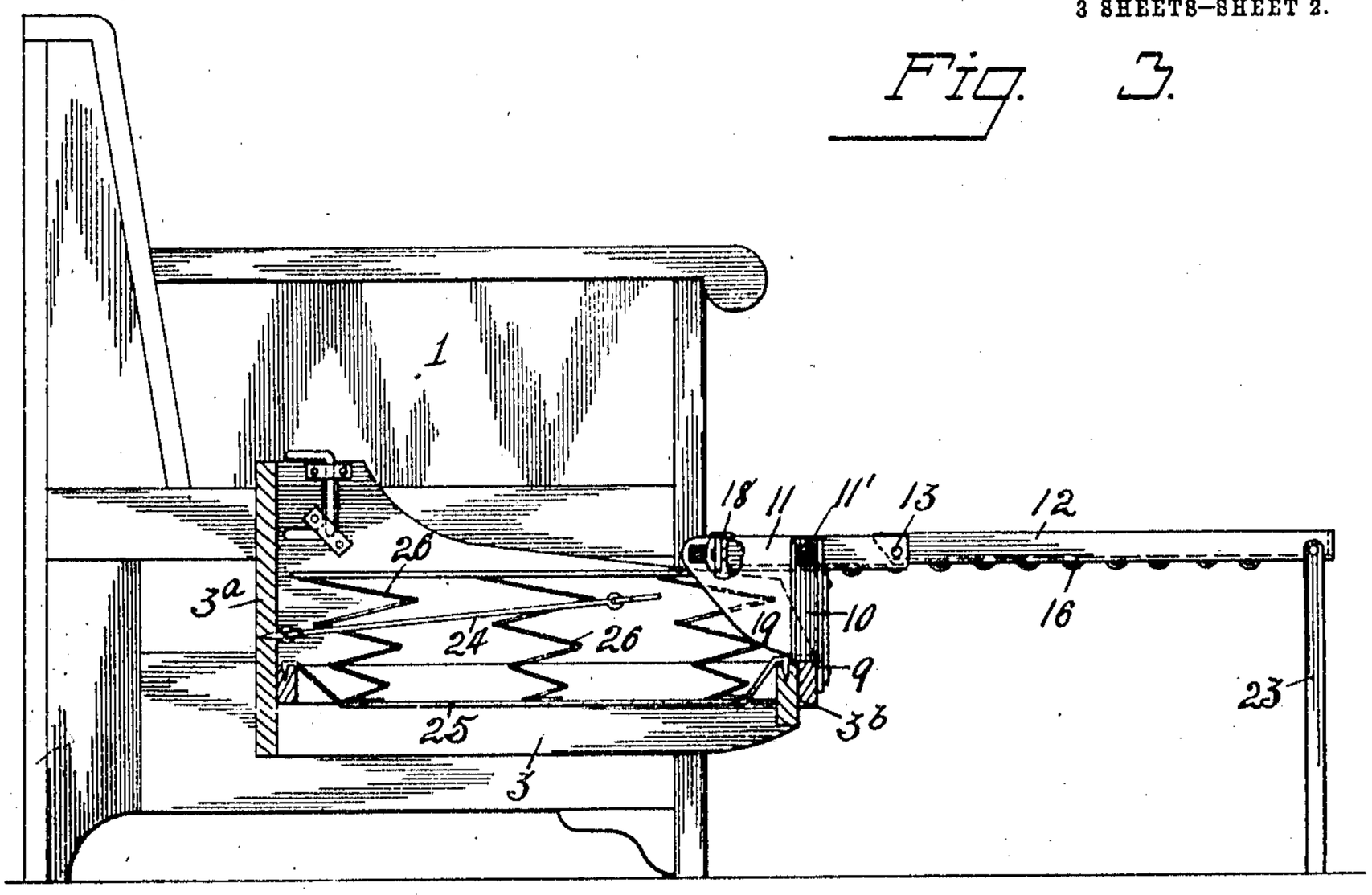
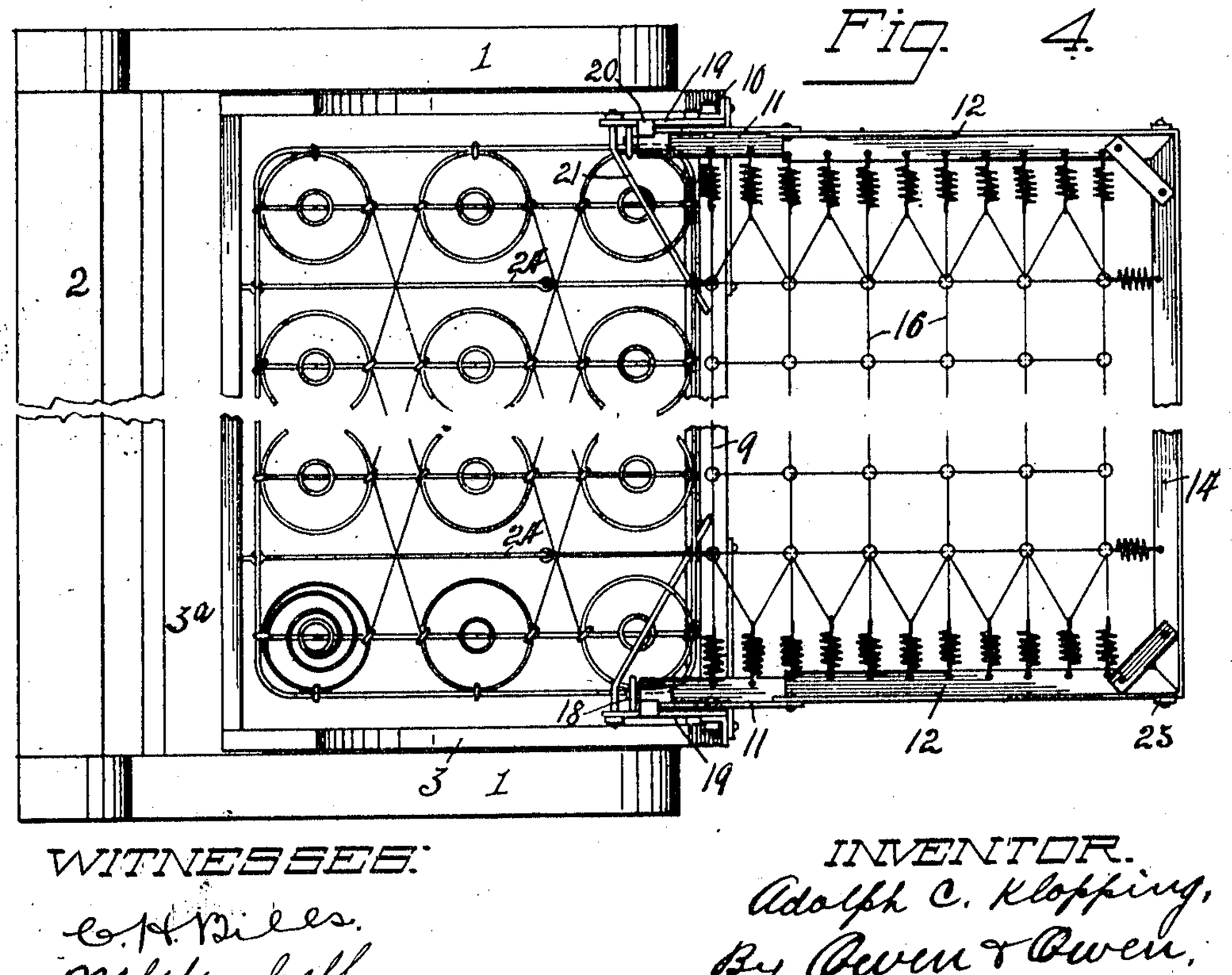



Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

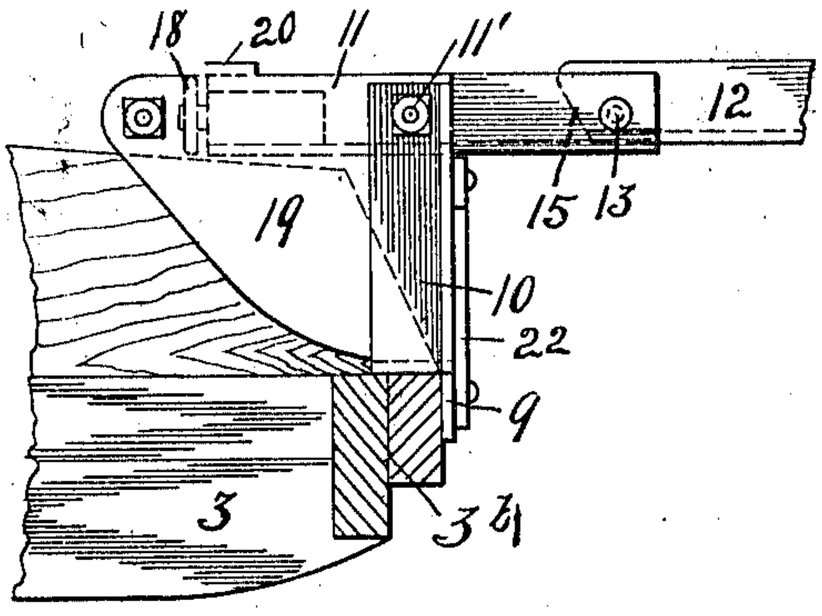



Fig. 6.

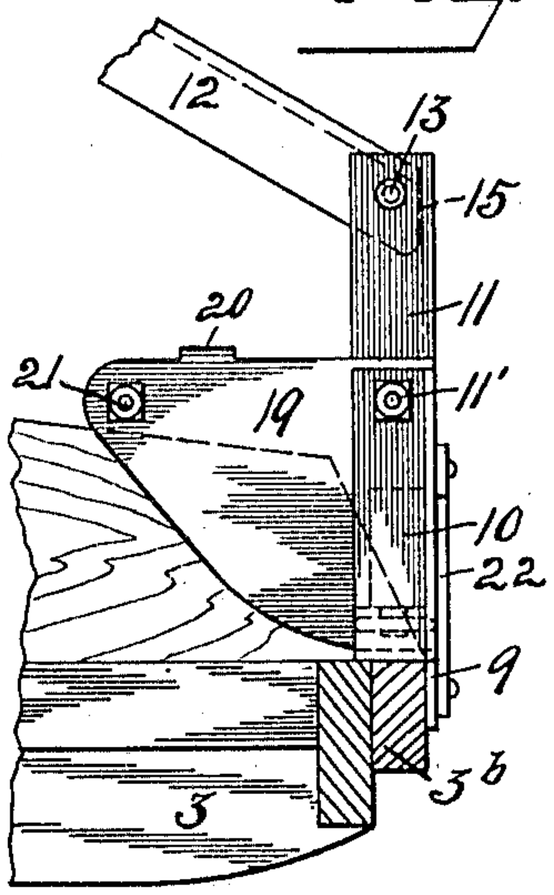



Fig. 7.

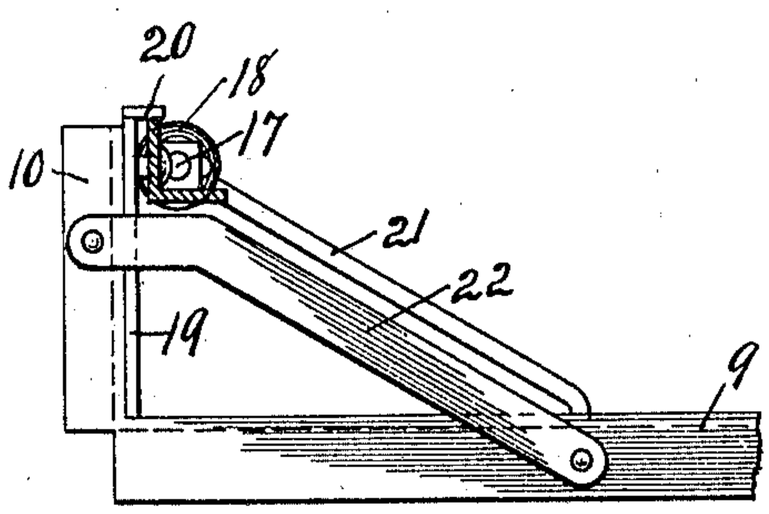



Fig. 8.

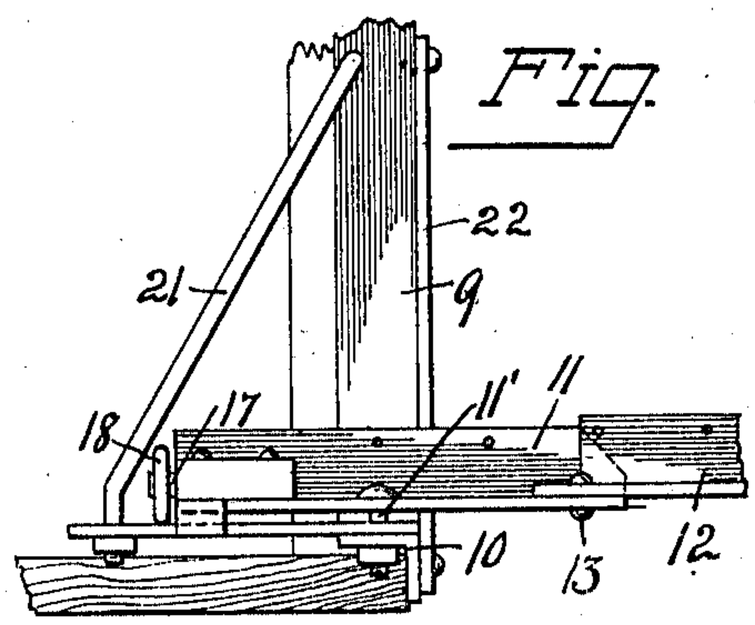
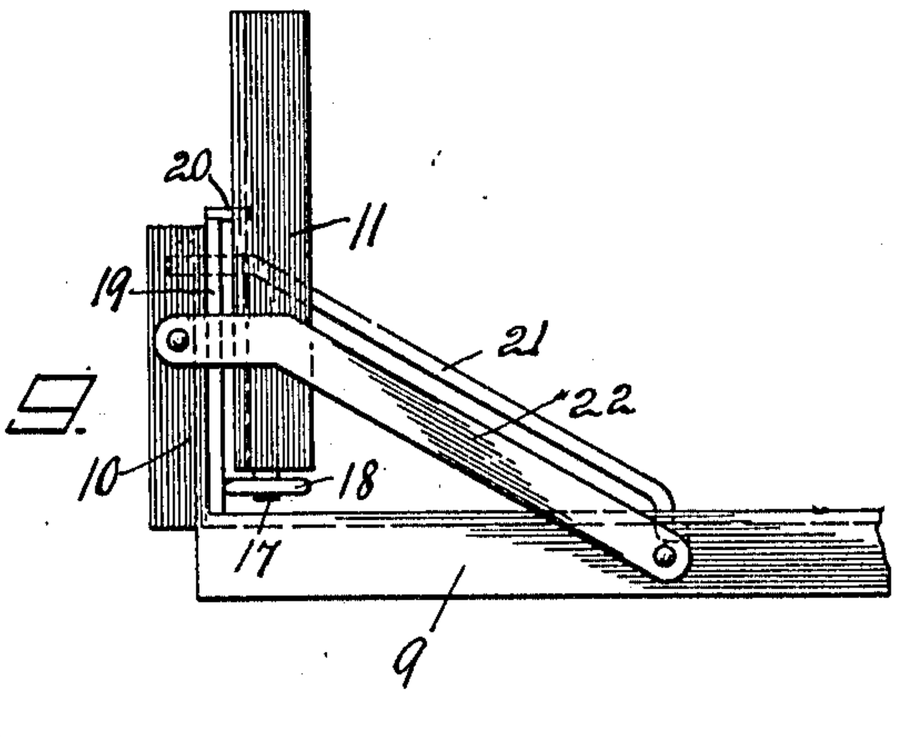



Fig. 9.

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# UNITED STATES PATENT OFFICE.

ADOLPH C. KLOPPING, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO THE TOLEDO PARLOR FURNITURE COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

## SOFA-DAVENPORT.

990,146. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed October 15, 1910. Serial No. 587,331.

*To all whom it may concern:*

Be it known that I, ADOLPH C. KLOPPING, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Sofa-Davenport; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to sofa or bed davenports of the reversible seat type.

The davenports of this class heretofore made have commonly included springs of the woven or fabric type. These have been found objectionable, however, for the reason that when subjected to heavy loads or pressures the portion of a spring over the seat frame will lower or give sufficiently to strike the subjacent frame parts. The construction of the bed-frame and the manner of folding the same however has rendered it difficult to overcome this objection.

The object of my invention is to overcome the objections incident to the sofa-davenports heretofore used by providing at least the portion of the bed-bottom or springs which is disposed over the seat, when in inverted position, with coiled springs, and so constructing the bed frame as to facilitate an easy and compact folding thereof under the seat frame to provide a receptacle for bedding and the like, and to render the construction of such frame simple and cheap.

The invention is fully described in the following specification and while in its broader aspect it is capable of embodiment in numerous forms a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a vertical cross-section of a sofa davenport frame embodying my invention with the back of the davenport frame and the coiled springs of the bed-frame removed and a portion of the seat frame end broken away. Fig. 2 is a cross-section of the device with the seat inverted. Fig. 3 is a similar view thereof with the bed-frame unfolded. Fig. 4 is a plan of the device with the bed-frame unfolded and a portion broken away. Figs. 5, 6, 7, 8 and 9 are different enlarged details of the bed-frame.

Referring to the drawings, 1, 1 designate the opposite ends of a davenport and 2 the back thereof. The customary seat frame 3 is mounted between the ends 1, 1, in a suitable manner to permit it to be turned or inverted as is common in davenports of this class, and is provided with a deep front piece $3^a$ and a shallow rear piece $3^b$, which latter is disposed adjacent the upper edges of the ends of the seat frame when the seat frame is in normal or closed position.

While the seat frame may be pivoted in any suitable manner within the davenport frame a preferable manner of mounting the same is that described in my former application Serial No. 572,233, filed July 16, 1910, which consists in the provision of a plate 4 at each end of the seat frame, which plate carries a stud 5 at one end thereof for working in a vertical slot 6 in a guide-bar 7, and has a link 8 pivotally attached at one end to the opposite end of said plate, while the other end of the link is pivotally anchored to the lower portion of the bar 7. When the seat is in its normal or closed position, as indicated in Fig. 1, the plate 4 is disposed horizontally with its stud 18 in advance of the point of connection of the link 19 therewith. To invert the position of the seat frame, the front end of the same is elevated thus raising the stud 5 in the slot 6 a sufficient height to permit the pivotal point of connection of the plate 4 and link 8 to pass under said stud so that a continued turning of the seat frame will cause it to assume an inverted position with the stud 5 disposed to the rear of the point of connection of the link 8 to the plate 4.

Pivoted to the upper edge of the cross-piece $3^b$ of the seat frame, when in inverted position, for limited vertical tilting movements relative thereto, is a cross-bar 9 which has standards 10 rising from the ends thereof. The bar 9 and uprights 10 are shown in the present instance as comprising a single angle-iron bar, which is bent at its ends to form the uprights. Bars 11 are pivoted to the upper or free ends of the up-

rights 10 and have the opposing bed frame bars 12 pivoted to their outer ends, as at 13, said bars 12 being rigidly connected at their outer ends by a cross-bar 14, as shown. The bed-frame bars are preferably but not necessarily of angle-iron with their horizontal flanges turned inwardly and the inner ends of the side bars 12, 12 are preferably cut on a bevel or incline, as shown at 15, to permit them to have limited pivotal or folding movements relative to the short bars 11 by which they are carried, the ends of the bars 12 and the inturned flanges of the bars 11 coacting to limit their relative movements. Upon a continued folding movement of the bed-frame when the ends of the bars 12 have engaged the inturned flanges of the bars 11, the latter bars will be caused to turn upon their pivots 11′ to vertical position and the bars 11 and supporting uprights 10 will then turn inwardly as a unit toward the front piece $3^a$ of the seat-frame to place the bed-frame bars 12, 12 in horizontal position with their outer or free ends in substantial abutment with the front piece $3^a$ of the frame, as shown in Figs. 1 and 2. A spring fabric 16 of any suitable construction is attached to the bed-frame bars 11, 12 and 14 as best shown in Fig. 4.

In order to prevent a weight or pressure upon the spring bed-bottom, such as would be caused by a person lying thereon, from effecting an inward drawing or buckling of the side frame bars at their jointed ends due to the greater strain being exerted on said bars between the pivots 11′ and the outer frame-bar 14, the short or inner frame bars 11 have their free ends extended inwardly beyond their pivots as shown and provided at their free ends with longitudinally extending spindles 17 carrying thrust-rolls 18 which bear outwardly against thrust-plates 19. These plates are secured to and project inwardly from the standards 10 and are of suitable size and shape for the rolls 18 to remain in continuous contact therewith in whatever position the bars 11 may be in relative to the standards 10. The plates 19 are provided at their upper edges with inwardly projecting ears or lugs 20, which serve as stops for limiting the unfolding movements of the bars 11 relative to the standards 10. Braces 21 and 22 connect the outer ends of the plates 19 and the standards 10, respectively, to the bar 9 to strengthen such parts relative to said bar. The outer end of the bed-frame, when unfolded, is supported in horizontal position by legs 23 which are pivoted thereto.

As no cross-bar is provided at the inner end of the bed-frame to which the inner edge of the spring fabric 16 may be attached, such edge of the fabric, when the bed frame is in unfolded position is suitably anchored to prevent a sagging of the fabric at such point by jointed or sectional anchor rods 24, which connect the inner edge of the fabric to the front piece $3^a$ of the seat-frame, as best shown in Figs. 3 and 4. The rods 24 are jointed to permit a flexing of the same when the bed-frame is in folded position, as shown in Fig. 2, as the inner edge of the fabric is then closer to the front piece $3^a$ of the seat-frame than when the bed-frame is unfolded, as is apparent.

The seat-frame 3 is provided adjacent its lower edge, when inverted, with a plurality of cross-bars 25 which form supports for a set of coiled springs 26 which springs are mounted entirely within the seat frame. This set of springs has its outer edge, or the edge thereof which is adjacent the rear piece $3^b$ of the seat-frame, disposed in close proximity to the inner edge of the spring fabric 16 to provide a practically uninterrupted spring surface or bed bottom from the outer end of the bed frame to the inner or front side of the seat frame.

It is apparent with this construction of bed frame and springs that after inverting the seat frame the bed frame may be easily and quickly unfolded by taking hold of the free end of the frame part formed by the bars 12, 12 and 14 and lifting the same upwardly and outwardly so as to effect an unfolding action of the entire bed-frame to place the bars 11, 11 and 12, 12 in horizontal position. To close the bed frame it is only necessary for the operator to raise the outer end of the frame part 12, 12, 14 and when the beveled ends 15 of the bars 12 coact with the inturned flanges of the bars 11 to continue the folding operation so as to turn the bars 11, 11 upon their pivots into vertical position with the standards 10 and then to tilt said standards 10 and bars 11 to move their pivotal points of connection inwardly toward the front piece $3^a$ of the seat frame and to place the bars 12 in substantially horizontal position therein, the mattress and bed clothing being compactly folded within the seat frame between the woven and coiled springs 16 and 26. When stress is applied to the woven fabric 16, when the bed frame is unfolded, the side bars 11 and 12 are rigidly held against inward collapsing or yielding movements due to the rolls 18 at the free ends of the bars 11 having their thrusts against the thrust plates 19. It is found that the construction shown and described provides a very rigid, strong and light bed bottom and frame therefor and that the objections incident to the old forms of bed bottoms in davenports of this class, due to the woven springs forming the entire bed bottom, are entirely obviated.

I wish it understood that my invention is not limited to any specific construction or

arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. In a sofa-davenport, an invertible seat frame, standards rising from an edge of said frame, a bed frame attached to said standards and comprising at least two sets of pivotally connected side bars the inner set of which is pivotally supported by said standards with their free ends projecting rearwardly from the standards and terminating adjacent to the outer edge of the seat frame when in unfolded position, a bar connecting the outer ends of the other set, means for receiving the lateral outward thrusts of the projected ends of said inner set, a spring fabric coacting with the bed frame to form a bed bottom, and means supporting the outer end of the bed frame.

2. In a sofa-davenport, an invertible seat-frame, standards rising from the rear edge of the frame when in an inverted position, bars pivoted to said standards, a second set of bars pivoted to said first mentioned bars and being rigidly connected at their outer ends, a spring fabric supported by said bars, means supporting the outer ends of one set of bars, and means for receiving the lateral thrusts of the inner ends of the bars pivoted to said standards.

3. In a sofa-davenport, an invertible seat-frame, standards rising from the rear edge of said frame when in inverted position and having thrust plates extending inwardly therefrom, a bed-frame comprising a plurality of sets of pivotally connected side-bars, the bars of one set being pivoted to said standards and having their inner ends in outer thrust contact with said thrust plates, means supporting the outer set of said bars, and a spring fabric attached to said bed-frame.

4. In a sofa-davenport, an invertible seat-frame, standards rising from the rear edge of said seat-frame when in inverted position, a bed-frame comprising a plurality of sets of pivotally connected bars, one set being pivoted to said standards and another set being rigidly connected at their outer ends, means supporting the outer end of said latter set, means resisting the outer thrusts of the inner ends of the bars which are pivoted to said standards, a spring fabric secured to said bed-frame, and means anchoring the inner edge of said fabric to the seat-frame when the bed-frame is in unfolded position.

5. In a sofa-davenport, an invertible seat-frame, a sectional pivotally jointed bed-frame pivotally carried by said seat-frame and capable of folding thereunder, said bed-frame when unfolded having its inner edge terminating adjacent the outer edge of the seat-frame when inverted, means resisting an outer thrust of the inner ends of the bed-frame sides and a spring fabric carried by said bed-frame.

6. In a sofa-davenport, an invertible seat-frame, a sectional pivotally jointed bed-frame pivotally carried by said seat-frame and capable of folding thereunder, said bed-frame when unfolded having its inner edge terminating adjacent the outer edge of the seat-frame when inverted, a spring fabric secured within said bed-frame, and means anchoring the inner edge of the fabric to the seat-frame when the bed-frame is in unfolded position.

7. In a sofa-davenport, an invertible seat-frame, a sectional pivotally jointed bed-frame pivotally carried by said seat-frame, said bed-frame being capable of folding under the seat-frame and, when unfolded, having its inner end terminating adjacent to the outer end of the seat-frame when inverted, a spring fabric carried by said bed-frame, means in continual contact with the inner frame side ends to receive the outer thrusts of said ends, and flexible means anchoring the inner edge of the spring fabric to the seat-frame.

8. In a sofa-davenport, an invertible seat-frame, standards rising from the outer edge of said frame when inverted, a sectional pivotally jointed bed-frame having its inner side sections pivoted to said standards, rolls carried at the inner ends of said inner bed-frame sections, thrust plates carried by said standards for receiving the outer thrusts of said rolls, a spring fabric carried by said bed-frame, and means anchoring the inner edge of said fabric to the seat-frame.

9. In a sofa-davenport, an invertible seat-frame, a set of coiled springs carried at the under side of said seat-frame, a sectional pivotally jointed bed-frame pivotally carried by the seat-frame, said bed-frame being capable of folding over said coiled springs when the seat-frame is inverted and having its inner end terminating adjacent to an edge of the coiled springs, and a spring fabric carried by said bed-frame and coöperating with said coiled springs to form a spring bed bottom when the seat-frame is inverted and the bed-frame is in unfolded position.

10. In a sofa-davenport, an invertible seat-frame, a set of coiled springs carried on the upper side of said seat frame when inverted, a sectional pivotally jointed bed-frame pivoted to the rear side of the seat-frame and adapted to fold over the coiled springs when the seat is inverted, said bed-frame having its inner ends terminating adjacent to the rear side of the seat-frame, means for receiving the outer thrusts of the inner ends of the bed-frame sides, a fabric

secured to said bed-frame and having its inner edge terminating adjacent to the inner edge of the coiled springs and coöperating therewith to form a bed bottom when the seat-frame is inverted and the bed-frame is unfolded, and means anchoring the inner edge of said fabric to the seat-frame.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH C. KLOPPING.

Witnesses:
C. W. Owen,
M. G. Gaskell.