

Witnesses

Martin H. Olsen.

Robert D. obberman

Inventor

Samuel Goldstein

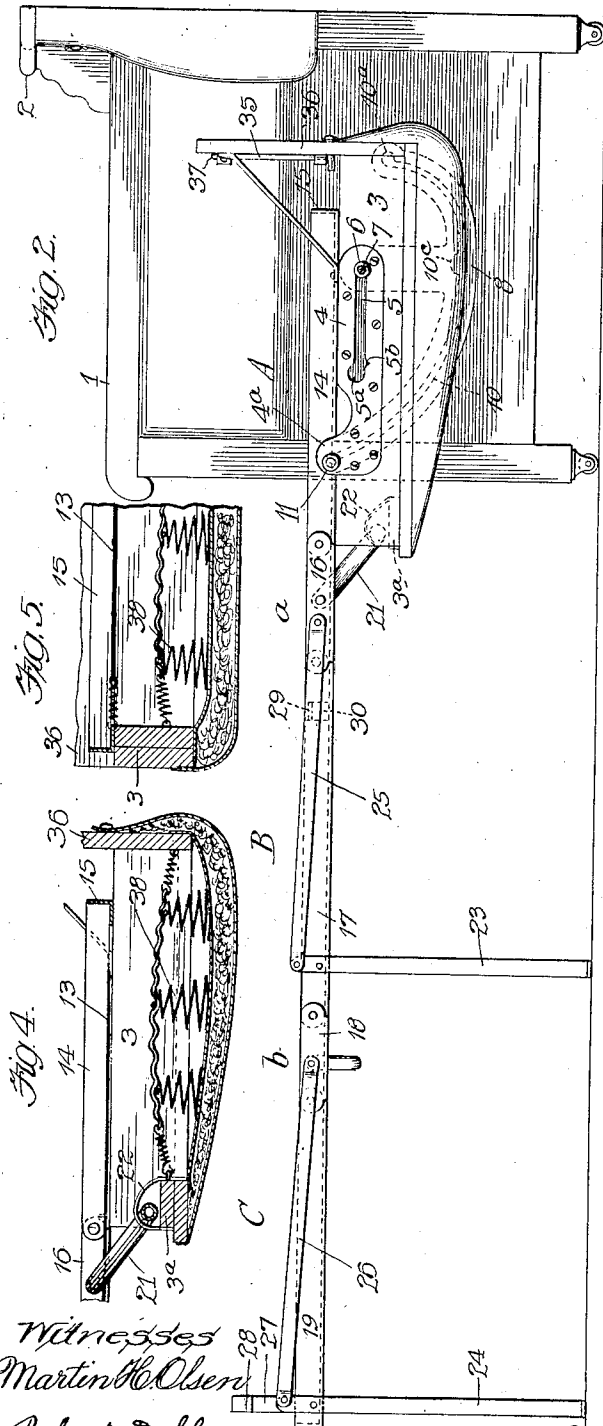
By Rector, Hibben Davis & Macaulay

Attys.

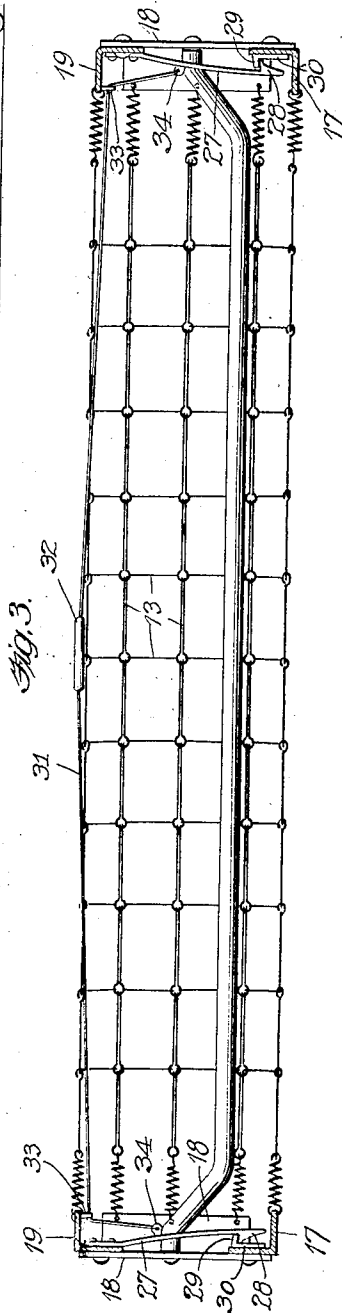
1,330,982.

Patented Feb. 17, 1920.

4 SHEETS—SHEET 2.



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Martin H. Olsen
Robert Dobberman



Inventor
Samuel Goldstein
By Rector, Hibben, Davis & Macauley,
His Attys

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S. GOLDSTEIN.
BED DAVENPORT OR COUCH.
APPLICATION FILED NOV. 24, 1913.

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4 SHEETS—SHEET 3.

Fig. 6.

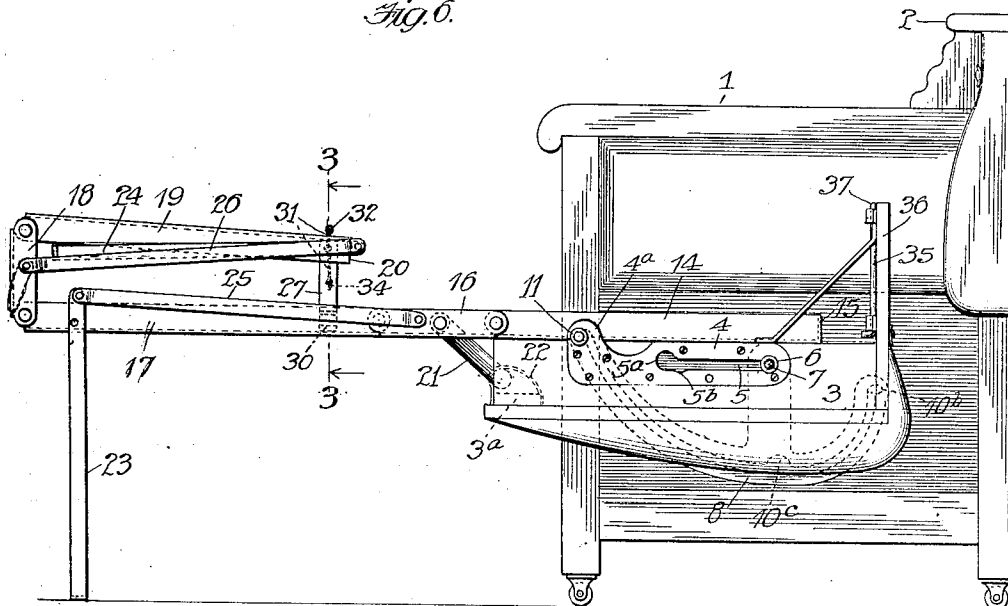


Fig. 7.

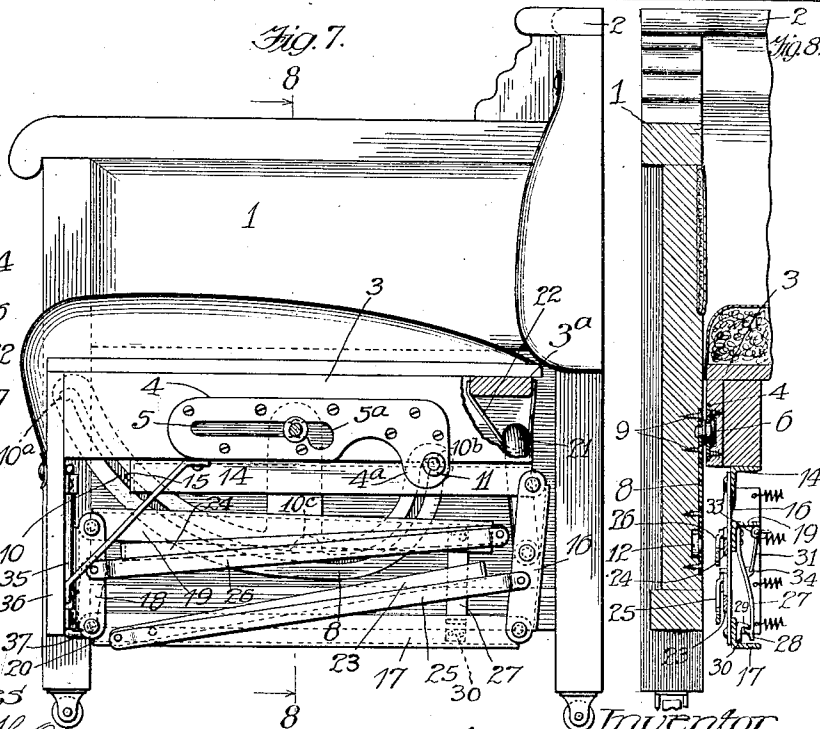
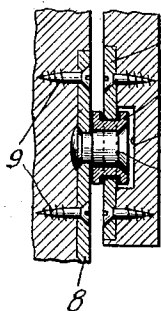


Fig. 9.



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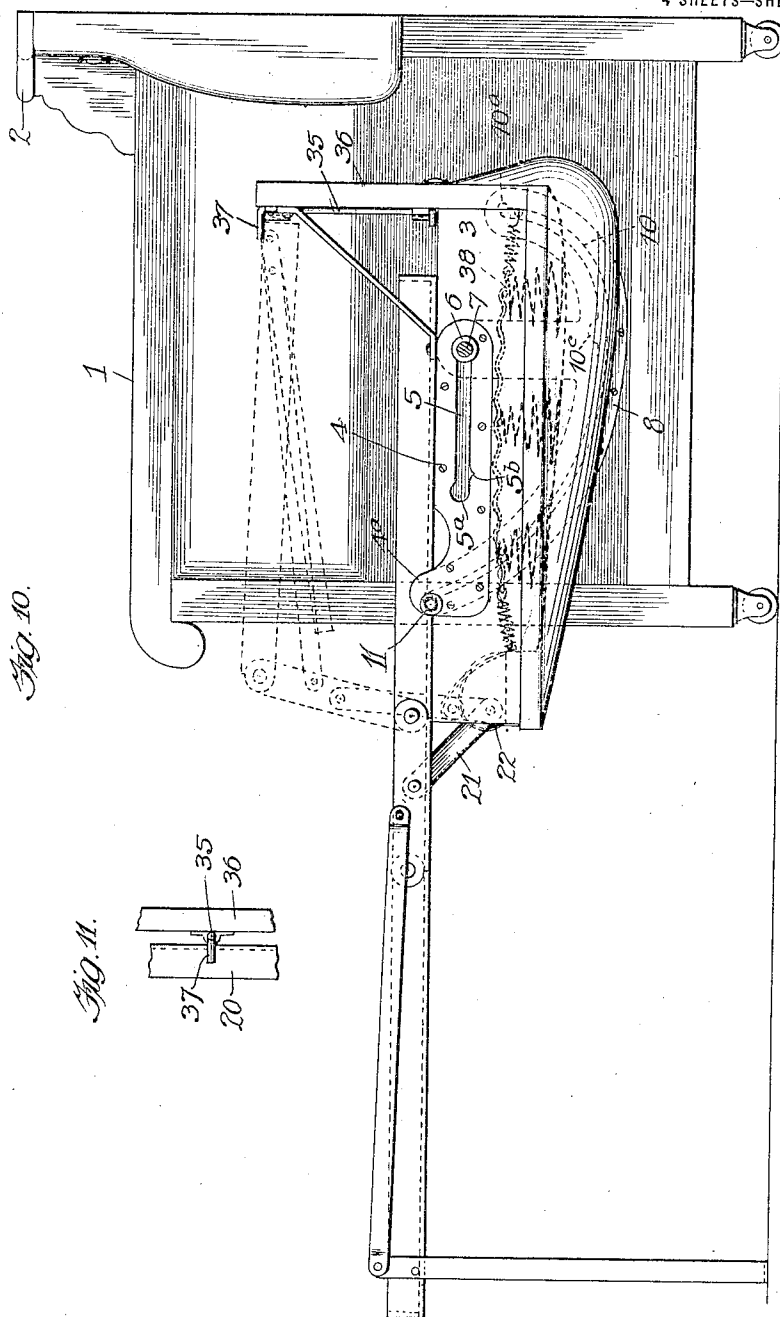
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UNITED STATES PATENT OFFICE.

SAMUEL GOLDSTEIN, OF CHICAGO, ILLINOIS.

BED DAVENPORT OR COUCH.

1,330,982.

Specification of Letters Patent.

Patented Feb. 17, 1920.

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To all whom it may concern:

Be it known that I, SAMUEL GOLDSTEIN, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Bed Davenports or Couches, of which the following is a specification.

My invention relates to a bed davenport or couch and the like, and the object thereof is to provide a novel, simple and efficient construction embodying features of advantage in operation and in manufacture, as will be apparent from the description hereinafter given.

In the drawings, Figure 1 is a plan view of one embodiment of my invention, the same being shown as a bed davenport with the spring sections shown extended; Fig. 2 a side elevation of the structure of Fig. 1 with one of the end frames removed; Fig. 3 a sectional elevation on the line 3—3 of Fig. 6; Figs. 4 and 5 detail views of a modified form of seat, Fig. 4 being a cross section of the seat, and Fig. 5 a cross section at right angles to the section shown in Fig. 4; Fig. 6 a view similar to Fig. 2 but showing the outermost section folded upon an intermediate section; Fig. 7 a view showing the bed davenport in normal or closed position, such view being a vertical section taken just inside of one of the end frames, or in other words, being substantially an elevation with one of the end frames removed; Fig. 8 a section taken on the line 8—8 of Fig. 7 but illustrating only one end frame of the parts immediately adjacent thereto; Fig. 9 an enlarged view of a portion of the section shown in Fig. 8; Fig. 10 a view similar to Fig. 2 but illustrating a three-section bed instead of a five-section bed, as shown in Fig. 2; Fig. 11 a detail plan view of the locking device illustrated in Fig. 10.

Referring to the present embodiment of my invention as herein shown in which the furniture containing the same is represented as a bed davenport, such davenport comprises two similar end frames 1 and suitable connecting pieces 2, a seat 3 and a bed spring made in foldable sections. In the present instance there are five of these sections, three of them being major sections whose position is represented by the reference letters A, B and C, and two minor sections whose position is indicated by the reference letters *a* and *b*, it being understood

of course that when the sections are extended a continuous bed spring, as illustrated in Fig. 1, results.

The seat 3 is constructed and arranged to have both a rotary and a sliding movement in order that it may be rotated from its normal upright position to an inverted position for bed purposes, such seat being capable of moving forwardly in the inverting operation. To this end the seat has secured to its opposite ends flat plates 4 which, as clearly shown in Figs. 2, 6 and 7, are each provided with a longitudinal slot 5 which is horizontal when the seat is in its normal or in its inverted position. This slot receives a fixed pivoting member which, in the present instance and by preference, is a roller 6 (Fig. 9). This roller is mounted to rotate on a stud 7 whose outer end passes through and is riveted against a supporting plate 8 secured to its adjacent end section by means of the screws 9 or otherwise. The roller 6 is flanged so as to be retained within the slot 5 except when the enlarged end 5^a of such slot is presented thereto, at which time the seat is removable from its bearings thus formed by the rollers, the opening 5^a being of sufficient size to permit the roller to pass therethrough. By this construction the seat is permitted both a rotary and a substantially horizontal movement. By preference the slot 5 of each plate or bracket 4 is provided on its lower side with a notch or recess 5^b in which the roller 6 rests in the normal position of the seat so that the latter in ordinary use is prevented from moving or swaying back and forth.

Upon the inner faces of the two end frames are provided curved trackways, which in practice are formed as slots in the same plate 8 which supports the stud of the roller 6. As more clearly shown in Fig. 7 the plate 8 has a vertical portion and a curved portion joined at the intermediate portion of the latter. This curved portion is provided with a slot 10 of the curvature illustrated. This slot terminates at its forward end in an offset 10^a and at its other end in a similar offset 10^b, as clearly illustrated in Figs. 6 and 7. The purposes of these offsets will be hereinafter explained. Each plate 4 has at its rearward end a lateral projecting stud 11 whose head is passed through the slot 10 at an enlarged opening 10^c therein, the body of the stud being ar-

ranged to travel along said slot. When the stud is in its rearward position, as shown in Fig. 7, it will rest in the offset 10^b and be retained therein against any accidental displacement and likewise when such stud is at the forward end of the slot it will be retained against accidental displacement by the offset 10^a. It will be understood that the head of each stud 11 travels in a groove 12 formed in the adjacent end frame of the davenport and having the same curvature as the slot 10. It will be understood that the construction of the curved plates is the preferred one but that such plate need not be made integral with the supporting plate 8 of the stud 7 and also that in case the end frames are made of metal the structure forming the slot 10 could be made integral therewith.

As hereinbefore stated, the bed spring shown in Figs. 1 to 8 is made in five sections lettered as above. In the present instance each section comprises opposite side frames pivoted at their adjacent ends with suitable spring fabric 13 arranged between them. The innermost major section A comprises two opposite side frames 14, which are here in the form of angle irons, and a similar angle iron 15 connecting the inner ends of the irons 14. This inner section is secured in any suitable manner to the bottom or lower side of the seat and remains at all times in fixed relationship therewith.

The innermost minor section *a* comprises in connection with the spring fabric 2 end frames 16 consisting of angle irons pivotally connected to the angle irons 14. The second or intermediate major portion B comprises in connection with the spring fabric 2 side frames 17 consisting of angle irons pivotally connected at their inner ends to the iron 16. The outermost minor section *b* comprises in connection with the spring fabric side frames 18 consisting of angle irons pivotally connected to the irons or frames 17. The major section C comprises in connection with the spring fabric, side frames 19 consisting of angle irons pivotally connected to the irons 18. The outer ends of the angle irons 19 are connected together by means of the angle iron 20.

A truss member which is here in the form of a substantially U-shaped bar 21 is connected at its opposite ends in pivotal manner to the side frames 16 of the innermost minor sections and substantially at the middle portion of such frames. This bar has certain movements in the folding and unfolding operations as hereinbefore described and in order to bring about these movements I provide a loose connection between the middle portion of this bar and the seat. In the present instance and as clearly shown in Figs. 6 and 7 this loose connection comprises a loop or strap 22 made of any suit-

able material and connected to the seat in any suitable manner. As shown, the ends of this strap are secured to the rear cross piece 3^a of the seat. By means of this bar and its loose connection the folding and unfolding of the parts are accomplished in an easy and automatic manner, as will be hereinafter made apparent in the description of the mode of operation.

The two sections are provided with pairs of supporting legs 23 and 24. The legs 23 are pivoted toward their upper ends to the side frames 17 and to their upper extended ends are pivotally connected the forwardly extending links 25 whose inner ends are pivotally connected to the side frames 16. In like manner the legs 24 are pivoted to the side frames 19 and to their upper ends are secured the links 26 whose inner ends are pivotally connected to the side frames 18. As a result of this construction the legs 23 and 24 will fold in alignment with their side frames in automatic manner and as an incident to the folding operation, and in like manner during the unfolding operation such legs will be extended or swung to their operative position, as shown in Fig. 2.

It is desirable to provide the outermost major section with means for locking the same to the next adjacent or intermediate major section, which means shall be simple and effective and at the same time readily and quickly operable. The means which I employ for this purpose consists of a pair of strips 27 made of suitable spring metal and secured at one end to the side frames 19. The outer or free ends of these strips are made in the form of half arrow heads, thereby providing shoulders or hooks 28 which are adapted to pass by and then snap behind projections on the inner side of the side frames or angle irons 17. In the present instance these projections are formed as flanges 29 at the end of a plate 30 secured to the inner side of said frames, as clearly shown in Figs. 3 and 6. It will be understood that when the outermost major section is folded over in the position indicated in Fig. 6, the locking strips are engaged with the projections 29 with the result that such outermost section is locked to the other sections and cannot be unfolded until the spring strips are released from their engagement. For convenient operation of these spring strips in simultaneous manner I provide a cord or cable 31 having a handle piece 32 and arranged along the outer edge of the outermost major section within convenient reach and grasp of the operator. This cable passes through openings in small brackets or eyes 33 in the end frames or angle irons 17 and its ends are attached at 34 to the spring strips and intermediate their length. As a result when the handle 32 is pulled by the operator the strips 27 will be simulta-

neously drawn inwardly toward each other and thereby released from locking engagement, whereupon the outermost section is free to be unfolded to the position shown in Fig. 2. In the reverse operation the outermost section C is merely turned over upon the intermediate major section B and the spring strips will automatically engage the projections 29 and thereby lock the parts together. In this manner the parts are held locked together in all positions and under all conditions except when the outermost section is extended, as shown in Fig. 2.

Describing the mode of operation and following the operation from the extended position shown in Fig. 2 to the closed position shown in Fig. 7, the operator lifts upwardly upon the outermost section C and folds the same over upon the section B until said locking engagement occurs. As an incident to this operation the legs 24 will automatically fold to the position indicated in Fig. 6. The operator then lifts upwardly upon the now combined or interlocked sections B and C whereupon the section C will come adjacent the innermost section A, the parts then assuming the relative position shown in Fig. 7 when viewed upside down. The next operation is that of turning the seat and the attached folding sections back to normal position, that is from its inverted to its normal position, as shown in Fig. 7. In order to hold the sections in their folded condition with respect to the seat I employ suitable locking means which here comprises a vertical rod 35, as shown in Figs. 1, 2, 10 and 11. This rod is hinged at its ends to the inner side of the board or panel 36 which depends from the front of the seat when the latter is in its normal position, as shown in Fig. 7. This locking bar has a right angled end portion 37 which is adapted to be swung over the cross piece 20 after the sections have been folded together. This locking bar will therefore not only lock these sections together but will also form a support therefor in the normal condition of the davenport. After the sections have thus been locked together by the locking bar 35, the parts are rotated in an anticlockwise direction when viewed as in Figs. 2 and 6, but before this rotation can take place the front end of these assembled parts are lifted upwardly and pushed backward slightly so as to disengage the studs 11 from the front offsets 10^a whereupon by releasing such upward pressure and pushing the assembled parts downwardly said studs will travel in the slots 10 and the parts will be turned over until they assume the normal position shown in Fig. 7. At this time the studs will occupy the extreme right hand end of the slots (Fig. 7) and will also engage in the offsets 10^b thereof so that the seat will be firmly held in normal position against accidental displacement. During

this rotary movement of the seat a horizontal movement also takes place at which time the seat moves with respect to the pivotal axis formed by the rollers 6, such movement being permitted by the slots 5 in the plates or brackets 4. When the parts have assumed their normal position shown in Fig. 7 the rollers 6 will engage in the notches 5^b which serve to prevent any back and forth swaying or oscillation of the seat when in use.

Referring to the operation and function of the cross bar 21, the position of the intermediate portion thereof when the bed sections are extended is indicated in Fig. 2, at which time such portion is at the outer end of the loop formed by the strap 22. When the outermost section is folded over no movement of this bar takes place but in the next operation when the two combined sections B and C are folded over upon the innermost section the bar bears against the outermost end of the loop and acts as a fulcrum in the continued folding movements. As the minor section *a* moves to upright position in such folding operation the bar 21 also moves upwardly being permitted to do so by the strap and such bar thereupon takes its position at what is the upper part of the loop when viewed as in Fig. 2, but which is the lower part of the loop when viewed in Fig. 7. This loose pivotal connection between the bar and the seat gives the proper action in the folding operation and permits the operator to merely keep folding the sections from the outer end until the final folded condition is reached as hereinbefore described.

My invention is also applicable to a bed davenport comprising a less number than five sections. For instance, I have illustrated in Fig. 10 an embodiment of my invention in a bed davenport having only three sections, that is two major sections and an intermediate minor section. The mode of operation of this construction is the same as that already described excepting that the major section C and minor section *b* have been omitted and consequently the same reference characters are employed. According to the construction shown in Fig. 10 the bed is adapted to be used in a direction longitudinally of the davenport, whereas in the first described section it is intended (although this is not essential) that the bed shall be used in a direction at right angles to the length of the davenport. Inasmuch as the body of the occupant in a structure as shown in Fig. 10 would occupy a position over the innermost section A, it is desirable to provide the spring structure for the seat itself as near to the top as possible in order that the spring fabric of the section A when thus depressed by the occupant shall not come in contact with the spring structure of the seat. Consequently, as shown in Figs. 4, 5 and 10, the spring structure which is indicated gen-

erally by the reference figure 38 is formed as short as possible and as near the top of the seat as practicable.

It will be understood that the constructions hereinbefore described are merely preferable and recommended embodiments of my invention and that consequently my invention may be embodied in structures differing somewhat mechanically but possessing the same general structure and mode of operation. It will also be understood that the structure and its various parts may be made of any desired material and of any desired size and proportions and that indeed my invention may be embodied in a seat or chair which could be changed into a single width bed. In addition it is evident that my invention may be embodied in other kinds of furniture than that known as davenports, for instance, in couches and the like, which do not have any backs or end frames like a davenport.

I claim:

1. The combination of end frames, a seat mounted to rotate therebetween, a series of foldable bed sections, the innermost one of which is connected with the seat, a truss member connecting with one of the sections and having a loose pivotal connection with the seat.

2. The combination of end frames, a seat mounted to rotate therebetween, a series of foldable bed sections, the innermost one of which is connected with the seat, a cross bar pivotally connected at its ends with one of the sections, and means for loosely pivoting the intermediate portion of the bar upon the seat comprising a loop which is secured to the seat and through which the intermediate portion of the bar loosely passes.

3. The combination of end frames, a seat mounted to rotate therebetween, a series of foldable bed sections, the innermost one of which is connected with the seat, a truss bar which is in the form of a bail with its ends pivotally connected to opposite sides of one of the sections, and a flexible loop which is secured to the seat and through which the intermediate portion of the bar loosely passes.

4. The combination of end frames, a seat mounted to rotate therebetween, a series of foldable bed sections, the innermost one of which is connected with the seat, said seat having a longitudinal strip, a truss member pivotally connected at its ends with one of the sections, a loop which is secured to such strip and through which the intermediate portion of said member loosely passes.

5. The combination of end frames having inwardly extending bearings, a seat mounted to rotate and to slide on said bearings, a series of foldable bed sections including two major sections and an inter-

mediate minor section, the innermost one of the major sections being connected with the seat, and a member which is connected with the minor section and which has a loose pivotal connection with the seat.

6. The combination of end frames having inwardly extending bearings, a seat mounted to rotate and to slide on said bearings, a series of foldable bed sections including two major sections and an intermediate minor section, the innermost one of the major sections being connected with the seat, and a truss member in the form of a bail which is pivoted at its ends to opposite sides of the minor section and whose intermediate portion has a loose pivotal connection with the seat.

7. The combination of end frames having inwardly extending bearings, a seat mounted to rotate and to slide on said bearings, a series of foldable bed sections including two major sections and an intermediate minor section, the innermost one of the major sections being connected with the seat, a truss member in the form of a bail which is pivoted at its ends to opposite sides of the minor section, and means on the seat forming a loose pivotal connection for said truss member thereon.

8. The combination of end frames having inwardly extending bearings, a seat mounted to rotate and to slide on said bearings, a series of foldable bed sections including two major sections and an intermediate minor section, the innermost one of the major sections being connected with the seat, a truss member in the form of a bail which is pivoted at its ends to opposite sides of the minor section, and a strap on the seat forming an elongated loop through which the intermediate portion of said bar loosely passes.

9. The combination of end frames, bearing members in the form of grooved rollers fixedly secured to the inner sides of the frames, a seat mounted to rotate and to slide on said rollers, plates secured to the ends of the seat and having longitudinal slots to receive said rollers, said seat ends also having slots to receive the rollers and a bed spring connected with the seat.

10. The combination of end frames having inwardly extending bearings, a seat mounted to rotate and to slide on said bearings, long and relatively narrow plates secured to the ends of the seat and having longitudinal slots to receive said bearings and also having projecting studs, relatively large plates secured to the inner sides of the frames and supporting said bearings and having curved slots to receive said studs, and a bed spring connected with the seat.

SAMUEL GOLDSTEIN.

Witnesses:

MEYER GOLDSTEIN,
S. E. HIBBEN.