

1,334,768.

J. LUPPINO.
DAVENPORT SOFA BED.
APPLICATION FILED JUNE 1, 1917.

Patented Mar. 23, 1920.
5 SHEETS—SHEET 1.

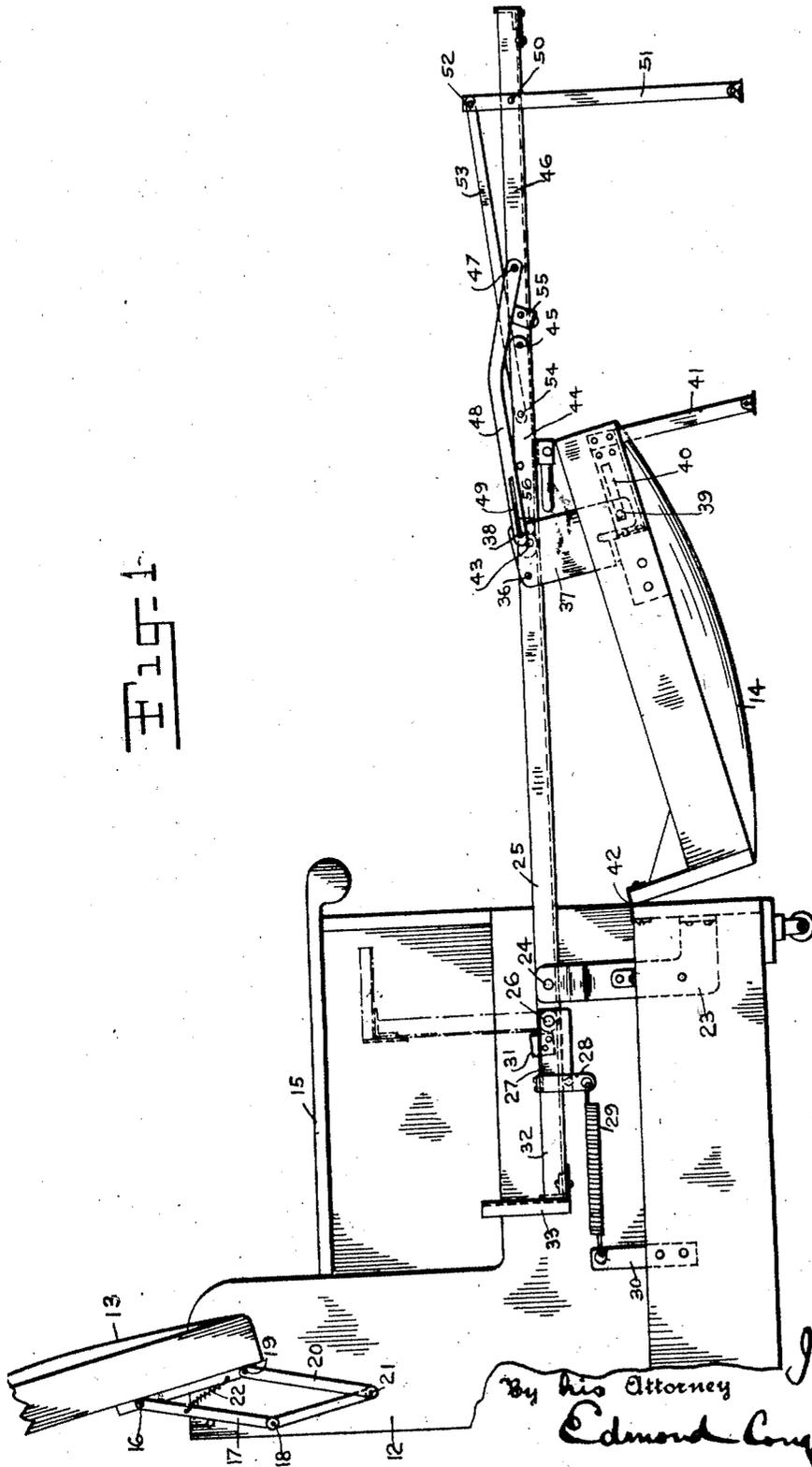


Fig. 1

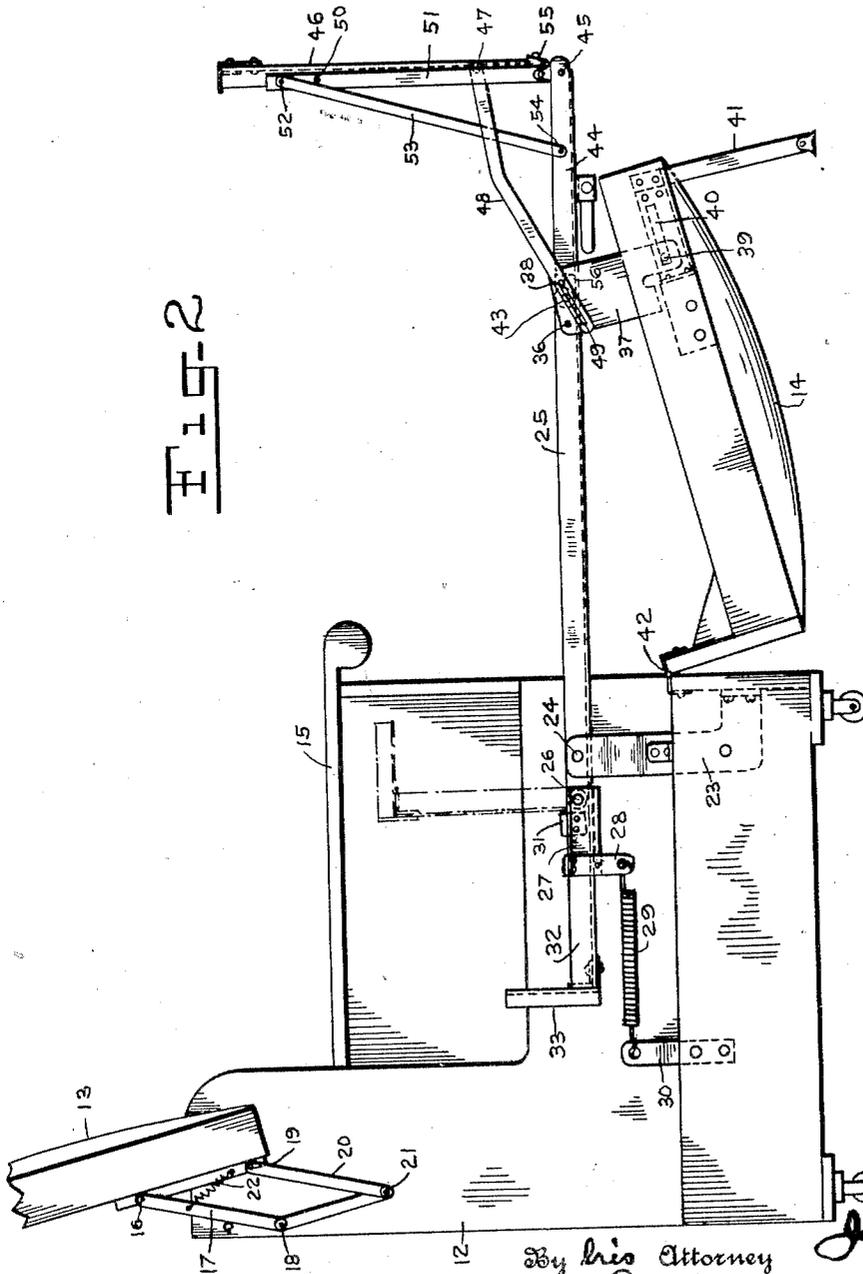
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5 SHEETS—SHEET 2.

FIG-2



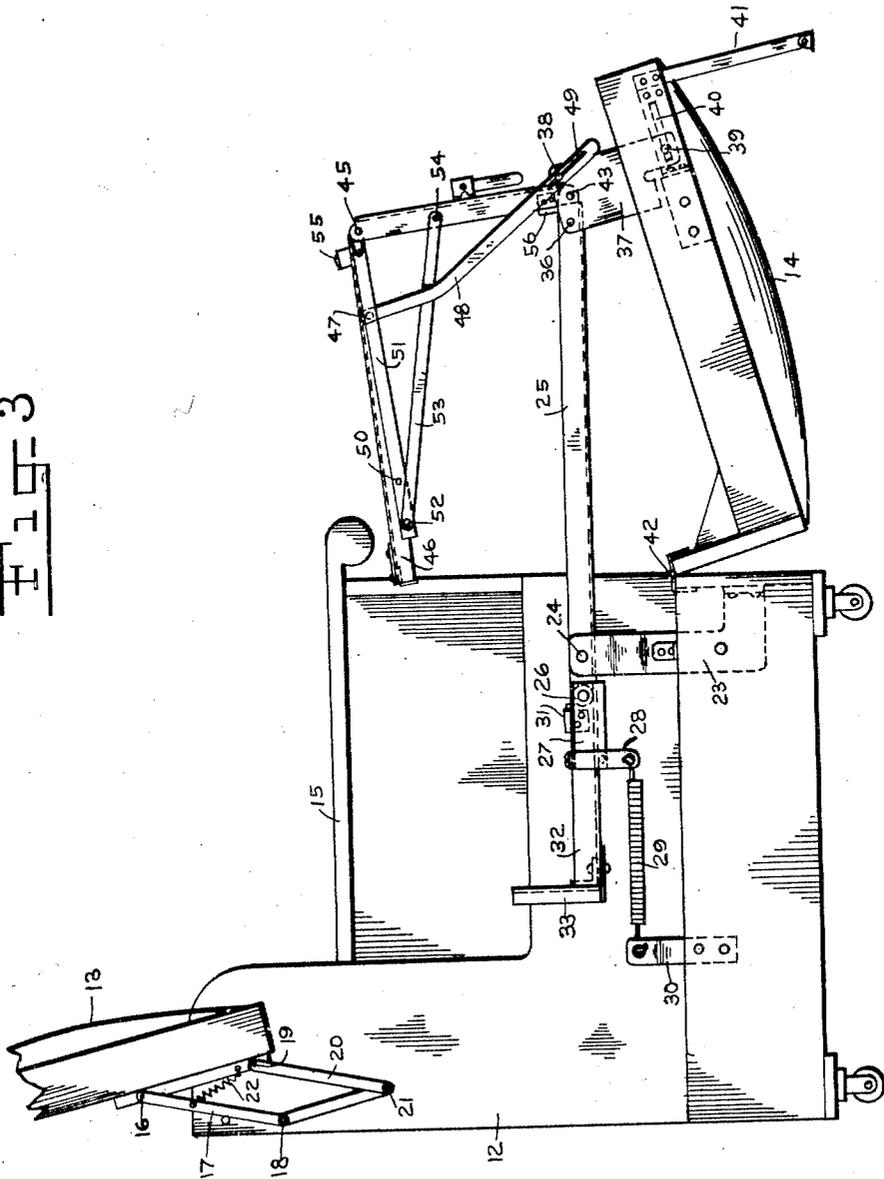
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5 SHEETS—SHEET 3.

FIG. 3



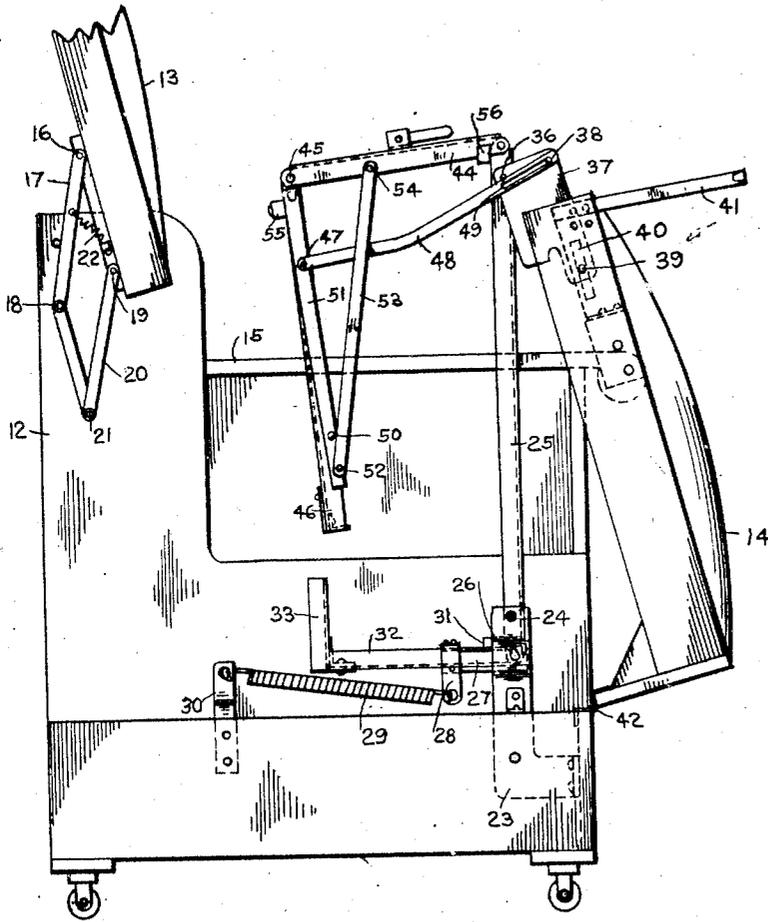
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Fig-4



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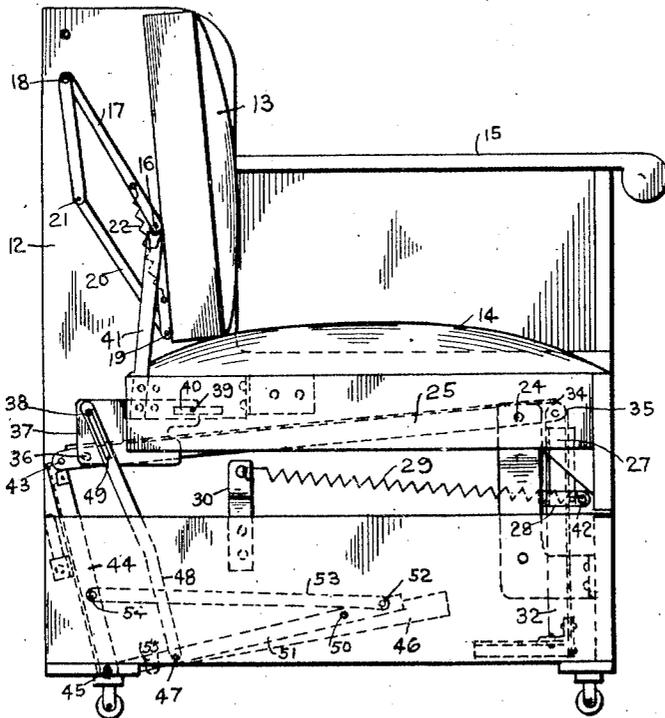
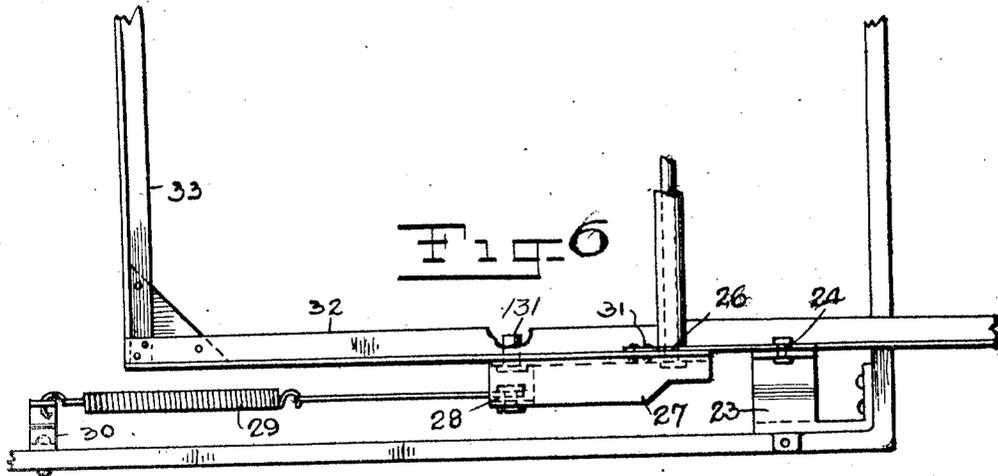


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DAVENPORT SOFA-BED.

1,334,768.

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Application filed June 1, 1917. Serial No. 173,227.

To all whom it may concern:

Be it known that I, JOSEPH LUPPINO, a citizen of the United States, and a resident of the borough of Brooklyn, in the city and State of New York, have invented certain new and useful Improvements in Davenport Sofa-Beds, of which the following is a specification.

The invention relates to folding beds, and has for some of its principal objects to provide such a bed which may be closed with the mattress and bedding in place, and still occupy a comparatively small space, which may be easily opened or closed, and which when closed may be used as a sofa.

The invention consists in the novel construction, arrangement and combination of various devices, elements and parts, as shown in the accompanying drawings and fully described in this specification.

In the said drawings, Figure 1 is a side view of my improved davenport sofa bed, showing the same in its open position, one of the sofa arms being removed for clearness; Fig. 2 is a similar view showing the parts in the position occupied after the first operation in folding up the bed; Fig. 3 shows the second operation; Fig. 4 shows the third operation; and Fig. 5 shows the bed completely folded up, in the position in which it may be used as a davenport sofa; and Fig. 6 is a plan view of a portion of the frame and connecting parts.

In carrying my invention into effect in the embodiment thereof which I have selected for illustration in the accompanying drawings and description in this specification, I provide a davenport sofa frame having if desired a suitable rear portion, and having side portions 12 and arms 15. I provide a back cushion 13, swingingly secured between the members 12, and a seat cushion 14, secured in a manner to be hereinafter described, these cushions being suitably covered.

Each end of the cushion 13 is pivoted at 16 to a link 17, the other end of which is pivoted at 18 on one of the members 12. Pivoted to the cushion member 13 at 19 is a second link 20 parallel to the link 17, the other end of which link 20 is pivoted at 21 on one of the members 12. A spring 22 acts between the link 17 and the cushion 13, enabling the said cushion to be easily raised into the position shown in Figs. 1 to 4 in-

clusive, where it will be held until moved by the friction of the various pivots; and preventing the said cushion from falling too rapidly when moved into the position shown in Fig. 5.

I provide a metal frame for the bed-portion, constructed as follows: Rigidly secured to each side of the sofa frame is a supporting member 23, pivoted to which at 24 is a bed member 25. Pivoted at 26 to one end of the bed member 25 is a swinging arm 27, provided with downwardly extending portions 28, to the lower end of each of which is secured one end of a spring 29, the other end of which is secured to a member 30 rigid on the sofa frame. Also pivoted at 26 is a bed member 32, which carries a head board 33. Secured to the swinging arm 27, and projecting laterally therefrom and underneath the bed member 32, so as to be adapted to coact therewith, is a stop 31 (particularly shown in Fig. 6). This stop however may instead be attached to the bed member and project above the swinging arm, the essential point being that by means of such a stop the swinging arm and the bed member coact in such a way that when the bed member 32 is lowered or the swinging arm 27 raised, the said swinging arm 27 and said bed member 32 coact with each other but that nevertheless the bed member 32 may if desired be raised for the purpose of cleaning the bed or otherwise without at the same time moving the swinging arm. The various bed members are constructed of angle-irons, and are so arranged that the bed member 32 will rest upon and be supported by the swinging arm 27, and cannot drop below the plane of said swinging arm 27, but may when desired be swung upward into the position shown by the dotted lines in Figs. 1 and 2, independently of the member 27. Referring to Fig. 5 it will be observed that the bed member 25 is provided with a flange 34 adapted to engage with a similar flange 35 on either the swinging arm 27 or the bed member 32, whereby the said bed member 32 will be prevented from dropping below the plane of the bed member 25, in a manner which will be obvious.

Pivoted at 36 in the bed member 25 is a link 37, provided with a stud 38, the use of which will be hereinafter described, and also provided with a stud 39 adapted to slide in a slot 40 located in the seat member

14. This seat member 14 is hinged at 42 to the sofa frame, and is provided with a pair of legs 41 adapted when the bed is in its open position to support the bed member 25 and when the bed is in its closed or folded position to support the back cushion member 13. (See Fig. 5.)

Pivoted at 43 to the bed member 25 is a bed member 44, to the other end of which at 45 is pivoted a bed member 46. These bed members may be provided with means analogous to those employed between the bed members 25 and 32, so as to prevent the bed member 44 from dropping below the plane of the member 25 and the member 46 from dropping below the plane of the member 44, thus bearing part of the weight of these members.

Pivoted at 47 to the bed member 46 is one end of a curved link 48, the other end of which is provided with a slot 49, adapted to engage with the stud 38 on the link 37. Pivoted at 50 on each side of the bed member 46 is a leg 51, to which is pivoted at 52 one end of a link 53, the other end of which is pivoted at 54 to the bed member 44. A stop 55 is provided on the member 46, which is adapted when the bed is in its open position to support the link 48 and bear part of the strain of holding the parts in position. A stop 56 is provided on the member 44, the function of which will be described.

The operation of my invention is as follows: Assuming the bed to be in its open position as shown in Fig. 1, and that it is desired to close or fold up the same, the first operation consists in lifting the member 46 into a vertical position, as shown in Fig. 2. The legs 51 are thereby automatically swung parallel with the member 46. The slot 49 in the link 48 allows the necessary movement of the said link 48 relative to the link 37 for the performance of this first operation.

The next operation is to swing the member 44 into an approximately vertical position, as shown in Fig. 3. The member 46 will thereby be swung into a horizontal position and be supported as described above. The stop 56 on the member 44 will rest upon the member 25 and hold the said member 44 approximately vertical. The parts will then occupy the position shown in Fig. 3.

Fig. 4 illustrates the next step. The member 25 is swung into a vertical position, swinging the seat cushion member 14 upward and also swinging the link 37 downward, the stud 39 sliding in the slot 40. The member 44 is held approximately horizontal by the stop 56, while the member 46 is held in the position shown in said Fig. 4 by the link 48, which is drawn to the right of Fig. 4 by the movement of the link 37. What is then the lower end of the member 46 is somewhat nearer to the member 25 than the upper end, thus compressing the bed cloth-

ing at this point and tending to keep the same in place, while avoiding the necessity of sharply bending the mattress.

The result of the final operation is illustrated in Fig. 5. Before this step is taken the back cushion member 13 must be raised into the position shown in Figs. 1, 2, 3, and 4, if this has not already been done. The member 25 is swung into an approximately horizontal position, automatically swinging the seat cushion member 14 into the position shown in this Fig. 5. A portion of the under side of the seat 14 is supported by resting upon the top of the member 23. The pivotal point 34 bears against the under side of the seat 14 and prevents the left hand end of the member 25 (pivoted at 24) from dropping downward. The plate 37 is supported in position by the pivots 36 and 39, and in turn supports the link 48. The member 46 is supported by the link 48. The bed member 32 is forced downward into a vertical position by the action of the bed members 25 against the edge of the stop 31 (see more particularly Fig. 6), thus also forcing down the swinging arm 27 by means of the stop 131, against the tension of the spring 29; in this position the head board 33 will support the end of the mattress. The weight lowered by this last operation is compensated for by the stretching of the spring 29, which in turn assists in the first operation of opening the bed. The final step in folding up the bed is to lower the back cushion member 13.

The operation of unfolding will be readily understood from what has been set forth regarding the operation of folding. When the bed is in its open position, the member 32 and head board 33 may be lifted, as hereinabove explained, without raising the member 27 and pulling against the spring 29; thus making the inside of the sofa case readily accessible for cleaning or any other purpose, and facilitating the raising or lowering of the back cushion member 13.

The advantages of my invention will be obvious from what has been said regarding the construction and operation. I do not limit myself to the exact construction shown and described, as the same might be modified in various respects without departing from the spirit and scope of my invention.

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

1. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a swinging arm pivoted to said bed member, a resilient member having one end secured to said swinging arm and the other end secured to said stationary frame, a second bed member pivoted to said first bed member and adapted

to coact with said swinging arm, a third bed member pivoted to said first bed member, and a fourth bed member pivoted to said third bed member.

5 2. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a second bed member pivoted to said first named bed member,
10 a link pivoted to said first named bed member and provided with a stud, a seat member pivotally secured to said stationary frame and having a slot adapted to be engaged by the stud on said link, a third bed
15 member pivoted to said first bed member, and a fourth bed member pivoted to said third bed member.

3. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a second bed member pivoted to said first named bed member,
20 a link pivoted to said first named bed member and provided with a stud, a third bed member pivoted to said first bed member, a fourth bed member pivoted to said third bed member, a link pivoted to said fourth bed member and provided with a slot adapted to be engaged by the stud on said first
25 named link, and controlling means for said link pivoted on said stationary frame.

4. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a second bed member pivoted to said first named bed member, a link pivoted to said first named bed member and provided with a stud, a second stud on said link, a seat member
30 pivotally secured to said stationary frame and having a slot adapted to be engaged by one of said studs, a third bed member pivoted to said first bed member, a fourth bed member pivoted to said third bed member,
35 and a link pivoted to said fourth bed member and provided with a slot adapted to be engaged by the other of said studs.

5. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a second bed member pivoted to said first bed member, a

link pivoted to said first named bed member and provided with a stud, a third bed member pivoted to said first bed member, a
55 fourth bed member pivoted to said third bed member, a link pivoted to said fourth bed member and provided with a slot adapted to be engaged by the stud on said first named link, a pair of legs each pivoted to said
60 fourth bed member, a link pivoted to each leg and to said third bed member, and a stop on said fourth bed member adapted to engage with one of said legs when said bed is folded up.

6. In a davenport soft bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a swinging arm pivoted to said bed member, and a second
70 bed member pivoted to said first named bed member and provided with means adapted to engage said swinging arm whereby when said bed member is lowered said swinging arm is forced downward and when said
75 swinging arm is raised said bed member is forced upward.

7. In a davenport sofa bed, the combination with a stationary frame provided with supporting means; of a bed member pivoted to said supporting means, a swinging arm pivoted to said bed member, and a series of further bed members pivotally connected together, one of said further bed members being provided with means adapted to engage
80 said swinging arm whereby when said bed member is lowered said swinging arm is forced downward and when said swinging arm is raised said bed member is forced upward.

8. In a davenport sofa bed, the combination with a stationary frame; of a bed member pivoted thereto, a swinging arm pivoted to said bed member, and a second bed member pivoted to said first named bed member
85 and provided with means adapted to engage said swinging arm whereby when said bed member is lowered said swinging arm is forced downward and when said swinging arm is raised said bed member is forced
90 upward.

In witness whereof I have hereunto signed my name this 28th day of May, 1917.

JOSEPH LUPPINO.