N. I. USIEVICH.

FOLDING BED.

APPLICATION FILED JUNE 7, 1919.

1,420,894. Patented June 27, 1922.

3 SHEETS—SHEET 1.

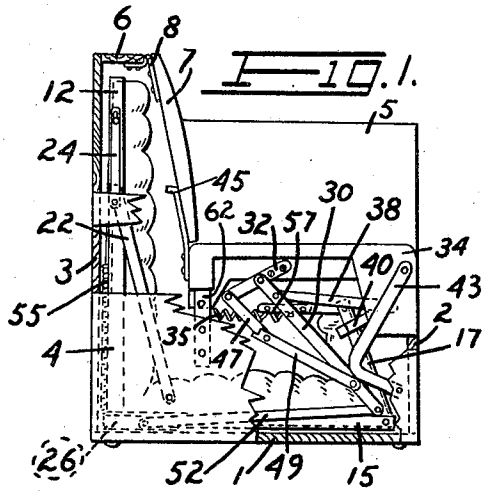


FIG. 1.

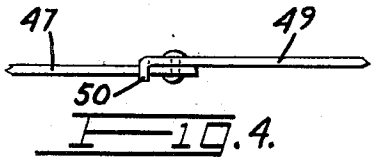


FIG. 4.

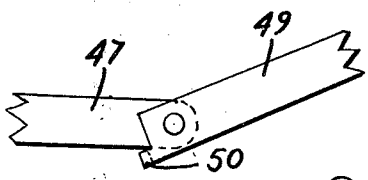


FIG. 5.

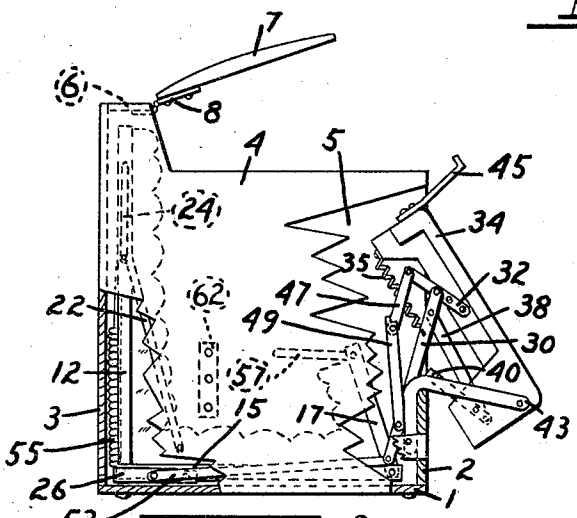


FIG. 2.

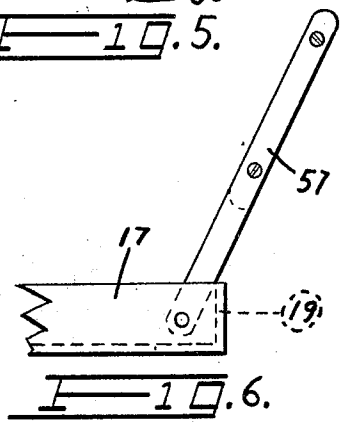


FIG. 6.

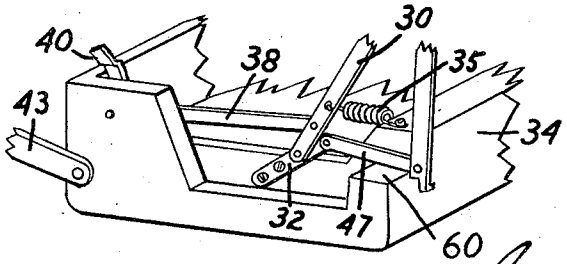


FIG. 3.

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3 SHEETS—SHEET 2.

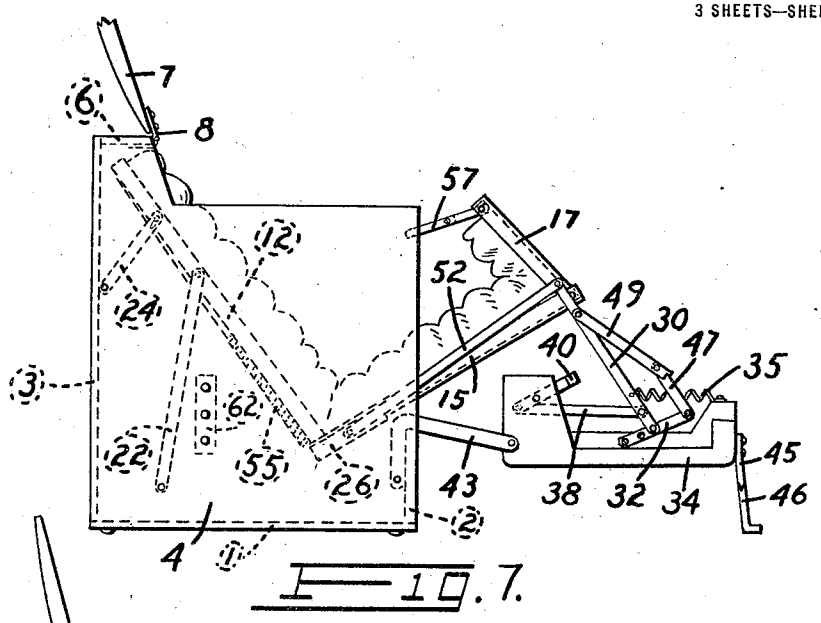


FIG. 7.

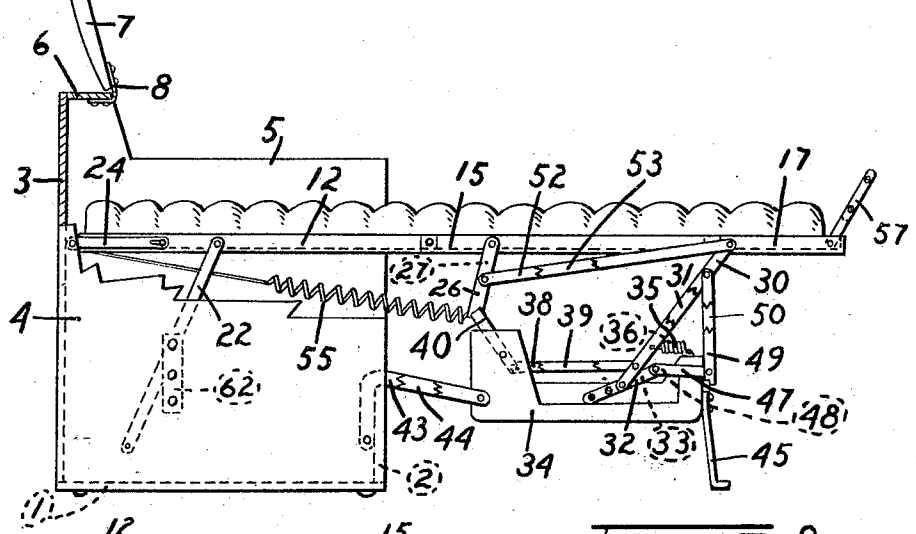


FIG. 8.

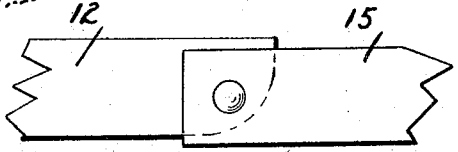


FIG. 9.

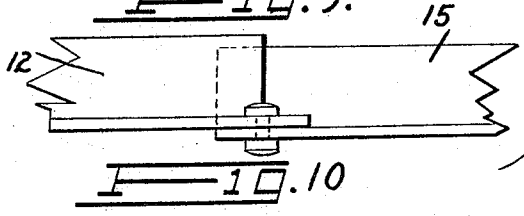


FIG. 10.

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3 SHEETS—SHEET 3.

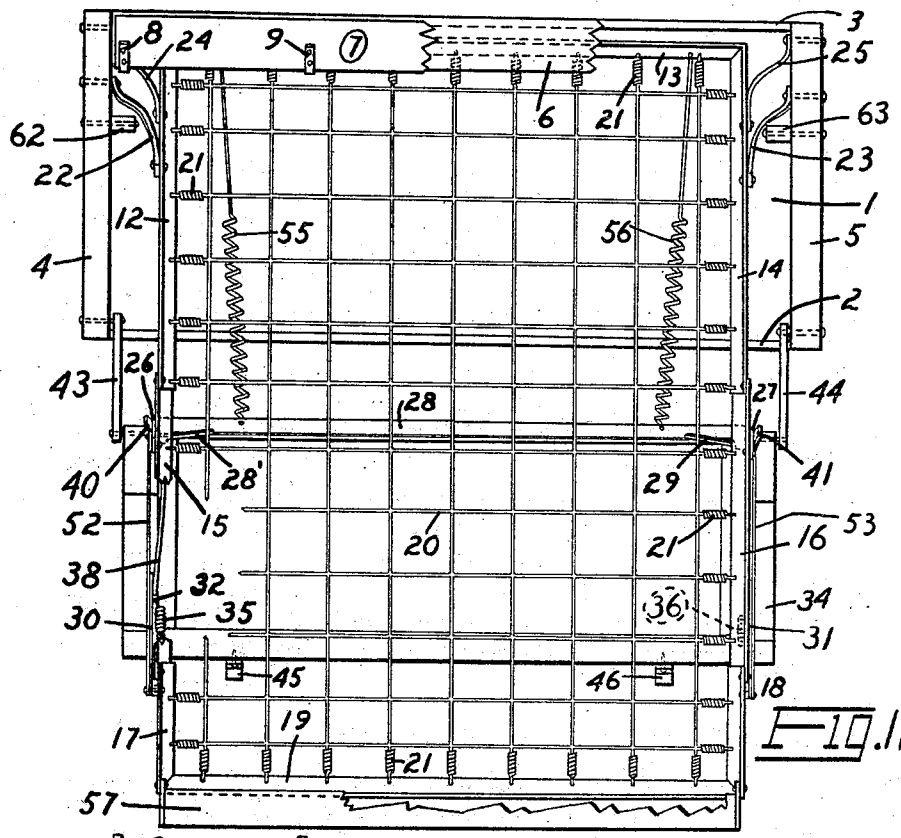


FIG. 11.

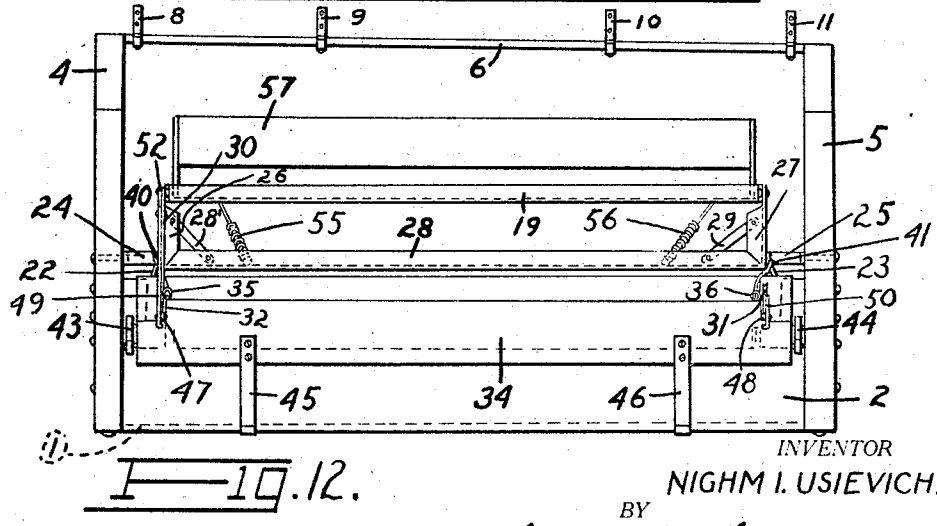


FIG. 12.

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UNITED STATES PATENT OFFICE.

NIGHM I. USIEVICH, OF SAN FRANCISCO, CALIFORNIA.

FOLDING BED.

1,420,894. Specification of Letters Patent. Patented June 27, 1922.

Application filed June 7, 1919. Serial No. 302,442.

To all whom it may concern:

Be it known that I, NIGHM I. USIEVICH, a citizen of Russia, residing at San Francisco, in the county of San Francisco, State of California, have invented a new and useful Folding Bed, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a folding sofa bed, and its object is to produce a bed which will be very compact, and which will give the user the benefit of a full length bed without unduly increasing the size of the frame containing the folding portions of the bed.

Another object of the invention is to produce a folding bed which will be very easy of operation because of the leverages allowed to lift the spring and matress out of the frame in which they are folded.

A further object of the invention is to lower the bed in place in its enclosing box with the least disturbance of the bed clothing, thereby making it easier to make up the bed than in those cases where the bed clothes are completely overturned, or than in those instances where one section of the bed folds over the top of another section.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the drawings in which the same reference numeral is applied to the same portion throughout, but I am aware that there may be modifications thereof.

Figure 1 is an end elevation of the bed as it appears when completely closed, a portion of the end of the enclosing box being broken away for purposes of illustration,

Figure 2 is an end view of the bed as it appears in the first opening position, with the back rest method, a portion of the end of the box being broken away for purposes of illustration,

Figure 3 is a perspective view of one end of the seat as it appears when completely opened,

Figures 4 and 5 respectively, are plan and side elevation of two of the links connected with the seat arm,

Figure 6 is a side elevation of the foot board support,

Figure 7 is an end view of the bed as it appears when in the second opening position,

Figure 8 is an end view of the bed with a portion of the enclosing box broken away, showing the bed completely open and ready for use,

Figures 9 and 10 are respectively side elevation and plan of one of the joints of the side rails connecting the back bed section and center bed section.

Figure 11 is a plan view of the bed as it appears when completely opened, and

Figure 12 is a front end elevation of the bed as it appears when completely opened.

The box for enclosing the bed consists of a bottom 1, to which is secured a low front side 2, with a high back 3, and ends 4 and 5 which act as arm pieces for the sofa when the bed is so used.

At the top of the back, there is a horizontal piece 6 which provides the necessary space for one member of the mattress frame to fold into, and which has the seat back 7 secured thereto by means of the four hinges 8 to 11 inclusive.

The bed proper consists of three sections, one of which stands at the back when the bed is closed and has a frame as indicated by the numbers 12, 13 and 14. The middle section consists of the side frame members 15 and 16 which are hinged to the front section consisting of two members 17 and 18 pivotally connected to the frame members 15 and 16 and connected together by means of the end frame member 19.

The bed has any suitable bed fabric 20 secured in its place by the springs 21.

The back section of the bed is supported by two links 22, 23 and is guided in its movement by means of two short links 24, 25, the latter pair of links being slotted to permit a certain looseness of movement whereby the back bed section may be caused to stand upright at the back of the box when the bed is folded.

The front end of the back bed section is supported wholly by the frame members 15 and 16 to which the members 12 and 14 are pivotally connected; and those frame members are in turn supported by two frame members or legs 26 and 27 which have a horizontally extending member 28 connected therewith and to which the frame members 26, 27 are also connected by means of the braces 28′, 29. When the bed is open for use the front frame members 17 to 19 inclusive are supported in a horizontal position by the links 30 and 31 which are pivotally connected

to the members 17 and 18 respectively. The frame members 17 and 18 are each connected to the frame members 15 and 16 by the same kind of a joint as is shown in Figs. 9 and 10 for the connection of the members 15 and 12 to produce a joint which can be bent in only one direction. The lower end of the links 30 and 31 are connected to two fixed arms 32 and 33 carried at the opposite ends of the seat 34.

Two spiral springs 35 and 36 tend to hold the bed in the position shown in Figure 8, said springs being connected to the links 30, 31 and to the under side of the back edge of the seat 34. The links 31 and 32 also have pivotally connected with them, links 38 and 39 which links are in turn pivotally connected to two levers 40, 41 which support the frame consisting of the members 26 to 29 inclusive. Said levers also prevent the bed from moving laterally when in use.

These levers 40 and 41 are pivotally mounted on the inside of the seat ends near the front of the seat. The seat itself has its front end pivotally connected to two L shaped levers 43 and 44 which levers are also pivotally connected to the inside of the bed frame near its front. In order to hold the seat off the floor at the proper elevation, it has two fixed legs 45 and 46 which also serve to prevent the back from being pushed back too far, note particularly Fig. 1.

The arms 32 and 33 have links 47 and 48 pivotally connected therewith at their ends, and these links are in turn connected to two links 49 and 50 in turn pivotally connected to the levers 30 and 31.

The pivot at the upper end of the links 30, 31 also has links 52, 53 connected therewith, which links are connected at their opposite ends to the frame members 26, 27 for the purpose of shifting said frame to the proper position to be engaged by the levers 40, 41 when the bed is ready for use. In order to prevent the bed frame from dropping down when an attempt is made to fold it up, two heavy springs 55 and 56 are connected with the back end of the bed frame and with the transverse member 28.

Any suitable head board as 57 may be attached to the frame members 17 and 18. In order to prevent the links 47 and 49 from straightening out too far and passing a dead center, the links 49 and 50 are provided with overlapping lugs as illustrated at 50 in Figs. 4 and 5, which lugs prevent said links from moving beyond the position shown in Figure 1.

In operation, the heavy springs 55 and 56 are in a compressed condition when the bed is completely folded up, and hold it up so that the legs 26, 27 and bar 28 connected thereto will not strike the bottom of the frame enclosing the bed. As the bed is opened, these springs are gradually stretched to the position shown in Figs. 8 and 11, while at the same time, the springs 35, 36 are gradually compressed until upon the complete opening of the bed they will appear as shown in Fig. 8.

It will also be observed that in opening, the links 52, 53 move so that the ends of said links connected to links 30, 31, pass the center of the pivot point on the supporting legs 49, 50, thereby insuring the locking of the bed so that it cannot fold up unexpectedly.

When the bed is completely opened, the links 47, 48 rest upon shoulders 60 on the ends of the bed seat, and the weight of the bed is thus carried to the legs 45, 46.

It is also to be observed that the links 47, 49 and their pair 48, 50 at the opposite end of the bed seat, are so shaped that they cannot pass the position indicated in Fig. 7 in order to insure lifting the bed properly as it is brought out of the frame and to prevent it from falling down as it might if those links were not so shaped as to prevent them from passing out of the position shown in Fig. 7.

When the bed is closed the seat rests on stops 62, 63 on the inside of the ends of the enclosing frame.

It will also be observed that the legs 26, 27 and the bar 28 connected thereto hold the bed frame sides from moving in under the tension of the springs.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is as follows, express reservation being made of permissible modifications.

1. A folding davenport comprising an enclosing frame, a bed frame in three hinged sections, links for connecting one of said sections to the davenport frame, an overturning seat connected to the davenport frame, links connecting the bed sections with the seat for the support of the bed sections, a support for the central portion of the bed extending to the seat when overturned, a spring connected with the end of one of the hinged bed sections and with said support to assist in manipulating the bed and a spring connected with the seat and bed frame links to further assist in manipulating the bed.

2. A folding davenport comprising an enclosing frame, a spring bed in three hinged sections, a pair of links for supporting one of said sections, one for preventing said sections from moving away from the frame more than a fixed amount, an overturning seat adapted to cover all of the sections, links extending from the seat to the two remaining sections for their support and a pair of links connected with the enclosing frame and with one of the bed sections to cause one of the bed sections to stand vertically at the back of the enclosing frame when the bed is folded.

3. A folding davenport comprising an enclosing frame, three hinged sections forming the spring bed frame, links for connecting one end of the bed frame with the enclosing frame, an overturning seat, links connecting the seat with the enclosing frame, other links connecting the seat and spring bed frame, a support extending from the central portion of the spring bed frame to the seat, springs connecting said support to the bed frame to assist in folding the bed frame, and other springs connecting the supporting bed links to the seat to assist in the manipulation of the bed frame.

4. A folding davenport comprising an enclosing frame, three hinged sections forming a spring bed frame, links connecting one of said sections to the davenport frame, positioned to cause that section to rise and stand vertically at the back of the enclosing frame, an overturning seat connected to the davenport frame, supporting links therefor, links connecting the front bed section and seat section whereby the bed sections may be concealed in the frame when the seat is overturned without overturning them, and a swinging support carried by the middle bed section to bear upon the seat section for the support of the middle of the bed.

5. A folding davenport comprising an enclosing frame, three hinged sections forming a spring bed frame, links connecting one of said sections to the davenport frame, an overturning seat connected to the davenport frame, links connecting said seat with the bed sections, legs extending from the central portion of the bed frame downwardly to form the lateral support of the bed frame, and swinging stops upon which said legs rest to support the bed frame.

6. A folding davenport comprising an enclosing frame, a bed frame in three hinged sections, links connecting one of said sections to the davenport frame, an overturning seat connected to the enclosing frame, links connecting said seat and the bed frame, a frame connected to the central portion of the bed frame to prevent the sides thereof from moving toward the frame, and stops on the seat on which the supporting frame rests when the bed is completely opened.

In testimony whereof I have hereunto set my hand this 27″ day of May A. D. 1919.

NIGHM I. USIEVICH.